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A Revision of the Genus *Cryptotympana* (Homoptera, Cicadidae)

Part I

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Abstract The cicadas belonging to the genus *Cryptotympana* STÅL are revised. Fifty species are recognized, including 18 new species. They can be classified into 11 species-groups on the basis of the morphological characters of the ♂ genitalia. Detailed descriptions of respective species are given, together with some discussion on their distribution and infraspecific problems.

In this part, 27 species under 5 groups are described and illustrated; 9 new species, *brevicorpus* (from Nias), *brunnea* (from Simeulue) *praeclara* (from Borneo), *ochromelas* (from Flores and Solor), *alorensis* (from Alor), *wetarensis* (from Wetar), *nitidula* (from Vietnam), *gracilis* (from Thailand) and *moultoni* (from Sumatra) are included.

The cicadas of the genus *Cryptotympana* are generally large-sized and dark-coloured with stout body and lustrous surface. Their taxonomic study have been undertaken since the middle of the last century by some European entomologists.

The genus *Cryptotympana* was established by STÅL in 1861 without designation of type species. However, he put 5 species, i.e., *Cicada atrata* FABRICIUS, *Cicada acuta* SIGNORET, *Cicada vicina* SIGNORET, *Cicada intermedia* SIGNORET and *Cicada immaculata* OLIVIER, in the genus. Later, DISTANT (1904b) designated "*C. pustulata* Fab.", as the type species.

WALKER described 12 species under the genus *Fidicina*, in a series of his publications, "List of hompterous insects in the collection of the British Museum" (1850–1858), with the exception of *facialis* which was described under the genus *Cicada*. After 1879, DISTANT issued numerous taxonomic works on Cicadidae, in which he newly described 17 species of the genus *Cryptotympana*.

MOULTON (1912, 1919, 1923, 1925, 1929) revised the Cicadidae of the Malayan region (Malay Peninsula, Sumatra, Borneo, etc.), giving descriptions of 2 new species belonging to the genus; he also gave the distributional data and discussion. Since 1925, KATO published a number of papers on the Cicadidae from Japan and its adjacent areas, giving original descriptions of 7 *Cryptotympana* species.

Up to 1920's, therefore, most species of the genus were described and named by several limited workers. In 1963, METCALF published the "General Catalogue of the

Homoptera, Fasc. VIII Cicadoidea", in which he summarized the synonymy of species by citation of previous literature. Nowadays, 44 species in total are known under the genus.

Of these, *C. immaculata,* described by OLIVIER in 1790 from Java, is dubious and undeterminable at the present time. During the course of this study, I was unable to find out its type specimen(s) and never succeeded in elucidating its taxonomic status. For this reason, I exclude *immaculata* (OLIVIER) from the present list of the species.

Current classification was based entirely on the coloration and markings of dorsum (head and thoracic nata), the hue of wings and, in particular, the sound-producing apparatus of ♂♂ (the shape and relative length of opercula). As pointed out in many other cicadas by some recent workers, the ♂ sound-producing apparatus is by itself not always reflected the phylogenetic relationships. CHINA (*in* MOULTON & CHINA 1926) first adopted the shape of ♂ genitalia to his description of cicadids; this character is very useful in the classification of the Cicadidae, and of the *Cryptotympana* as well.

Fig. 1. Distributional range of the genus *Cryptotympana*.

The *Cryptotmpana* cicadas form a group of the Oriental residents in general, with the probable origin in the Greater Sundas. The distributional range, nearly equivalent to that of Oriental *Chremistica*, extends from the western part of the Indian Subcontinent eastwards to the Lesser Sunda Islands (Timor), partly extending as far northwards as central Japan, the Korean Peninsula and northern China (Fig. 1).

Since I started in the systematic study of the genus, I have been able to examine rather sufficient number of *Cryptotymapan* specimens thanks to the collaborations of various institutions and many entomologists. With the exception of *immaculata*, I found 50 species belonging to the genus, including 18 new species. In this paper, I am going to describe or redescribe and illustrate all the species, in view of their infraspecific variations. From the synthetic analyses based mainly on the morphological characters of ♂ genitalia, the *Cryptotympana* species can be divided into 11 groups.

Terminology

Wings (Fig. 2–A) There are a few different opinions as regards the terminology of wing veins and cells. The determination of wing veins in the present study is exclusively in accordance with COMSTOCK-NEEDHAM system (COMSTOCK & NEEDHAM 1898) and EVANS (1941), because of probable importance of the close relation between the wing venation and tracheation. Wing cells are determined by the surrounding veins, and primarily by using the name of its anterior vein.

Male genitalia (Fig. 2–B, C, D) In the Cicadomorpha of Homoptera-Auchenorrhyncha, the Cicadidae are most peculiar in the morphology of the ♂ genitalia. The 9th abdominal segment forms a genital capsule, "pygofer", with the distinct caudal beak in *Cryptotympana*. The possession of the beak is emphasized by BOULARD (1979) on this genus and its allies. In several cases, there are a pair of ventral lobes derived from 9th sternum on the ventral side of pygofer. The phallic organ is formed by a tubular elongation of phallobase, called "theca (*thc*)" (SNODGRASS 1936, EVANS 1963). The theca often bears apical projection(s), and the endotheca, named "vesica (*vsc*)" (ORIAN 1964), is entirely membranous with the cornuti (*cr*) lengthened chord-like and frequently with a saccate process of or near the apex.

Depositories

The depositories of the specimens examined are abbreviated as listed below; the abbreviations are used also in the text.

BISH	Bernice P. Bishop Museum, Honolulu, Hawaii
BM	British Museum (Natural History), London, UK
CAS	California Academy of Sciences, San Francisco, USA
EUM	Ehime University, Matsuyama, Japan
HF	personal collection of Mr Haruo Fukuda, Kagoshima, Japan

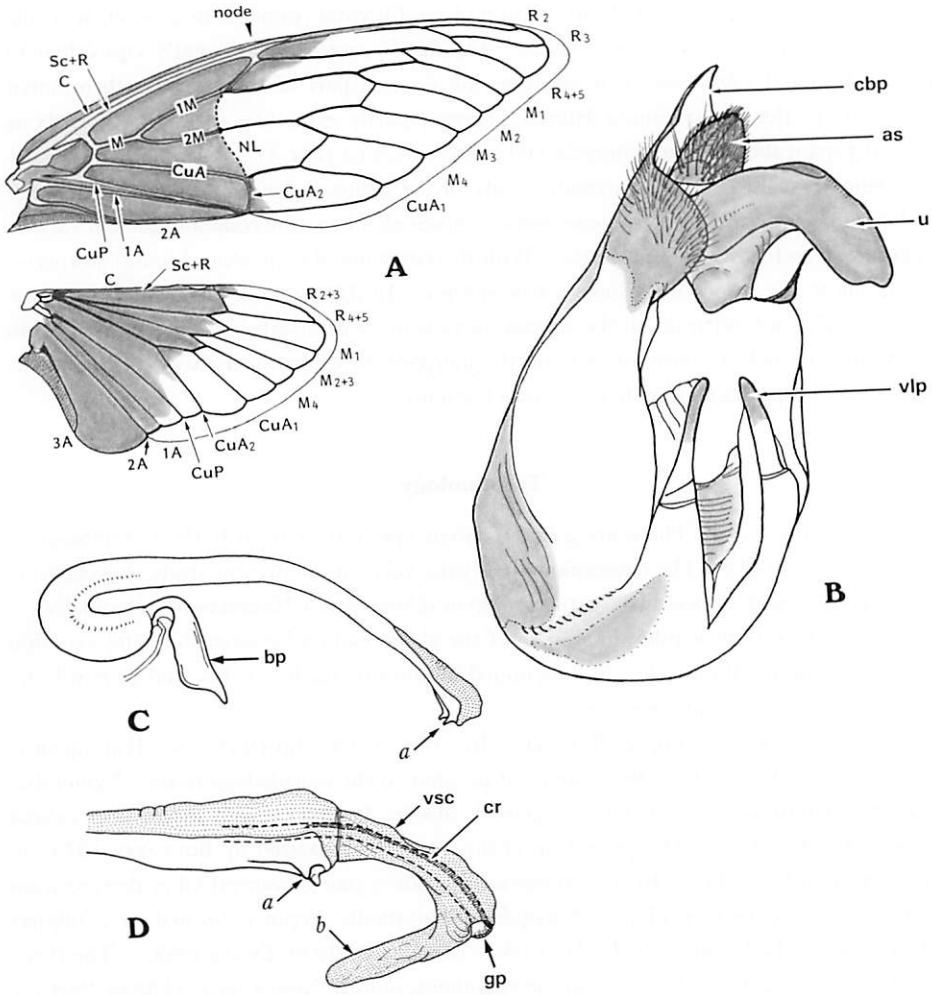

Fig. 2. Semischematic figures of *Cryptotympana*. A, Wings; B–D, ♂ genitalia. A: Right wings of *C. holsti*; NL, nodal line. —— B: Pygofer in oblique ventral view (*C. mandarina*); as, anal stylus; cbp, caudal beak of pygofer; u, uncus lobe; vlp, ventral lobe of pygofer. —— C: Theca of *C. takasagona*; *a*, apical projections of theca; bp, basal plate. —— D: Apical part of theca (*takasagona*) when vesica is everted; *b*, saccate process of vesica; cr, cornuti; gp, gonopore; vsc, vesica.

HUS	Hokkaido University, Sapporo, Japan
IPK	Institut für Pflanzenschutzforschung Kleinmachnow, Eberswalde, DDR
ISNB	Institut Royal des Sciences Naturelle de Belgique, Bruxelles, Belgique
KMNH	Kitakyushu Museum of Natural History, Kitakyushu, Japan
KUF	Kyushu University, Fukuoka, Japan
LACM	Los Angeles County Museum of Natural History, Los Angeles, USA

MH	collection of M. HAYASHI, Saitama University, Urawa, Japan
MNP	Muséum National d'Histoire Naturelle, Paris, France
NMB	Naturhistorisches Muserm in Basel, Basel, Schweitz
NIAES	National Institute of Agro-Environmental Sciences, Tsukuba, Japan
NMNH	National Musem of Natural History, Smithsonian Institution, Washington, D. C., USA
NRS	Naturhistoriska Riksmuseet, Stockholm, Sweden
NSMT	National Science Museum (Natural History), Tokyo, Japan
OMNH	Osaka Museum of Natural History, Osaka, Japan
RML	Rijksmuseum van Natuurlijke Historie, Leiden, Nederland
SI	personal collection of Mr Shôzô ISHIDA, Yokkaichi, Japan
SMTD	Staatliches Museum für Tierkunde, Dresden, DDR
TASY	personal collection of Messrs Toshiaki AOKI and Shûhei YAMAGUCHI, Tokyo, Japan
TF	personal collection of Dr Tomoo FUJIOKA, Tokyo, Japan
UOP	University of Osaka Prefecture, Sakai, Osaka, Japan
URO	University of the Ryukyus, Okinawa, Japan
ZMA	Zoölogisch Museum, Universiteit van Amsterdam, Amsterdam, Nederland
ZMH	Zoologisches Institut und Zoologisches Museum, Hamburg, BRD

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Genus *Cryptotympana* STÅL, 1861

Cryptotympana STÅL, 1861, *Ann. Soc. ent. Fr.*, (4), 1: 613.
Type species: *Tettigonia pustulata* FABRICIUS, 1787

Large, sometimes medium-sized; body stout, with smooth-surfaced and grossy dorsum; head wide, wider than base of mesonotum; eyes prominent laterally; ocelli compactly arranged at centre of vertex, and basal ones about 2× apart from eyes than from each other; frontoclypeus wide, ca 1/3 the width of head; rostrum relatively short, extending to or slightly beyond mid coxae; lateral margin of pronotum moderately or slightly sinuate; cruciform elevation (mesonotal scutellum) depressed and widened; abdomen obconical, longer than or as long as head and thorax; timbal covering complete, entirely concealing timbal; 2 distinct spines on under surface of fore femur; metaprepisternum conspicuously elevated at the central part, without central sulcation, forming a process extending backwards with acute tip; ♂ operculum oblong or triangular, and both opercula contiguous or slightly overlapping each other at the inner basal part; costal veins of forewing (C and Sc+R) stout, and nearly straight before node; vein CuP of forewing well separated from vein 1A at basal 4/5–2/5; ♂ subgenital plate (VIIIst) strongly rolling up in apical 1/3; pygofer with a caudal beak, and sometimes with a pair of distinct ventral lobes; uncus lobes long and completely fused into a single stick-like, club-like or beak-like lobe; theca with apical projection(s) and/or vesical saccate process; ovipositor not or slightly beyond 9th tergum caudally.

The genus *Cryptotympana* has been placed in the tribe Tibicenini (*sensu* Lyristini), together with the genera *Tibicen* BERTHOLD, 1827 (*sensu Lyristes* HORVÁTH, 1926), *Chremistica* STÅL, 1870, etc. In general, these 3 genera may be related to one another, forming a monophyletic group, in addition to other genera of Tibicenini, e.g. *Psaltoda, Macrotristria, Diceroprocta, Heteropsaltria, Nggeliana, Raiateana,* etc.

Other than the sound-producing apparatus, the morphological characters common to the genera *Cryptotympana, Chremistica* and *Tibicen* are found in the ♂ genitalia: both uncus lobes are completely united; theca situated just under uncus lobe; cornuti on vesica are

long and chord-like possibly functioning as a support of the vesica everted in copula; etc. On the other hand, comparisons of the ♂ genital structure between 3 genera are as follows: uncus lobe stick-like in *Cryptotympana,* while rather spatula-like in *Tibicen* and *Chremistica*; theca with subapical process in *Chremistica*, mostly with apical spine-like projection(s) in *Cryptotympana*, and without it in *Tibicen*; caudal beak of pygofer present in *Cryptotympana* and *Chremistica* (not always), and absent in *Tibicen*; vesical (membranous) process present only in most *Cryptotympana*. These characters seem to be some modifications in respective genera.

DISTANT (1913a) established a new genus *Salvazana* from Indo-China, with the suggestion of its alliance to *Cryptotympana*. Accordingly, METCALF (1963) put *Salvazana* next to *Cryptotympana* with the subtribe Cryptotympanaria. On the basis of a comparative study on the two genera, I consider that they have no close relationship because of the mutual differences in the ♂ genitalia although the presence of caudal pygoforal beak is concurrent. In this context, I am preparing a paper dealing with the systematic position of *Salvazana*.

BOULARD (1979) published a paper on the Cicadidae from the Solomon Islands and the Society Islands, in which he proposed a new tribe Cryptotympanini based on some genital structures of ♂♂ such as the presence of a caudal beak, etc. In the tribe, he included his genera *Nggeliana* and *Raiateana*. Judging from his descriptions and illustrations of the ♂ genitalia, his genera seem to be included in the range of *Tibicen* (= *Lyristes*) due to the shape of uncus lobe and theca, in spite of their possession of a caudal pygoforal beak which is found *Cryptotympana* cicadas. From these reasons, I herewith ragard the genus *Cryptotympana* as a member of the tribe Tibicenini.

Grouping of the Species

Based on the morphological characters of the ♂ genitalia, 49 *Cryptotympana* species can be arranged into 11 groups (1 species was known from only 1 ♀ specimen, and therefore, it is treated as a species incertae sedis). The key characters for the grouping are the shape of uncus lobe, a pair of pygoforal ventral lobes with the tips protruding inwards and caudad, the apical projection(s) on theca and a saccate (membranous) process of vesica everted, and so on (Fig. 3).

The *diomedea* group

This group is homogeneous, including the largest species of the genus. The characteristics of ♂ genitalia are as follows: a caudal beak of pygofer very small; ventral lobe of pygofer very distinct with round apex (the lobe, associated with the uncus lobe, has an important role in grasping the ♀ gonoporal area in copula); uncus lobe stick-like, without inner support of membrane; theca with a flat projection and a minutely dentate upheaval on underside of the apex; vesica rather long, with a long saccate process inwardly curved from underside of the tip, and directing backwards along thecal shaft. Head very wide, and distinctly wider than pronotum; ♂ opercula very long, generally

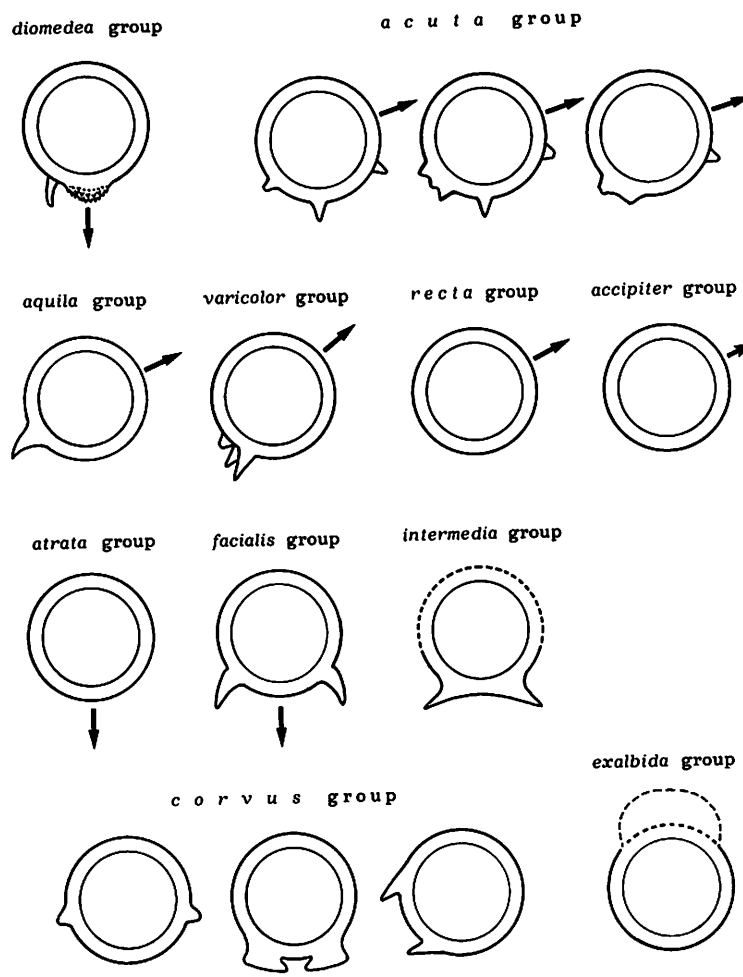


Fig. 3. Diagram of thecal apex, showing apical projection(s) and direction of vesical saccate process (marked by an arrow). Broken line indicates membrane.

divergent and contiguous to each other (not overlapping) at the inner bases; vein 2A of forewing curved inside in the basal 1/2. The *diomedea* group comprises 5 species, which occur mostly in Sumatra and partly also in the Malay Peninsula and Borneo.

The *acuta* group

Pygofer oblong, with ventral lobes indistinct and attached to the inside of ventral orifice; theca with 2–3 apical projections situated on the circumference (under 1/2–1/3); the left projection often becomes wide and flat; membranous saccate process at the tip of vesica directing laterally (slightly upwards), from the right side in apical view; vesica everted sometimes directing to the right and consequently vesical process protruding

backwards. Head about as wide as pronotum, or slightly narrower in some species; thoracic nota almost always with distinct markings; ♂ opercula variable in shape and length, of obtuse angle to elongate triangle. The *acuta* group is rather large, consistent of 9 species. The distributional range of the group extends from the Malay Peninsula and Sumatra (including its islets) to the Lesser Sundas through Java. It is interesting that no species has been known from Borneo.

The *aquila* group

Similar to the *acuta* group with the exception of theca, which possesses only 1 projection on the left side; vesica everted with a saccate process protruding laterally, and directing to the (obliquely) right. The vesical process consequently protrudes backwards, and in accordance with the direction of the vesica everted, the apical part of theca forming a T- or S-shape. Male operculum triangular; ♀ 9th segment short. This group is composed of 3 species, distributed in Neo-Malaya (Malay Peninsula, Sumatra and Borneo) and also in Indo-China.

The *varicolor* group

This group comprises 2 small-sized species, occurring in Sumatra (Neo-Malaya) and Sumbawa (the Lesser Sundas). Ventral lobes of pygofer indistinct; theca thick with 3 projections on the left ventral surface of the apical part, arranging from the tip to subapex; vesica everted directing to the right of thecal shaft and furnished with an apical saccate process on the upper lateral side. The apical part of theca (w/ vesica and its process) is T-shaped, as the result. Head as wide as or slightly narrower than pronotum; central part of cruciform elevation widely depressed; ♂ operculum oval, more or less angulate.

The *recta* group

Distinguished from the *acuta* group by the absence of apical thecal projections: lateral margin of pygofer turned and folded inside in about apical 1/2 or at middle, more or less covering lateral part of ventral orifice; in several species, ventral lobes of pygofer distinct as independent lobes; uncus lobe with a pair of small basal hooks in several species; vesica everted long and slender, with a saccate process protruding from the right side at apex; the saccate process directing backwards to some extent and bent inwardly in some species. Male opercula variable in shape and relative length, oval to triangular. This group is composed of 8 species, occurring widely in SE Asia, Indo-China~SW India including Neo-Malaya.

The *accipiter* group

This group is homogeneous, contisting of 10 species which are closely allied to one another. The distributional range is restricted to the Philippines and Sulawesi (Celebes). Similar to the *recta* group, but differing as follows: lateral margin of pygofer not folded; theca somewhat flattened towards apex; vesica everted very short, and thickened apically;

saccate process very short as a pouch, protruding from upper right surface of vesical apex. Dorsum almost always with brownish markings and/or spots; ♂ opercula generally triangular, inwardly hooked apicad in some species.

The *atrata* group

The group is represented by a single species, distributed widely in the Chinese continent. Pygofer widened in apical 1/2; uncus lobe unique in shape, of a wide beak, hardly curved; theca rather stout, with no projection at apex and with a rounded protuberance (membranous) on the upper side of the apical area; vesica everted long, with a saccate process at apex, which is protruding from underside of the tip and directing backwards. Head slightly narrower than pronotum; ♂ opercula oval and short, about as long as wide, more or less overlapping each other.

The *facialis* group

Pygofer globose towards base; ventral pygoforal lobes indistinct; apical part of theca widened, with a pair of spines protruding from the ventrolateral part; vesica extending caudad, possessing a saccate process coming out from apical or subapical part of the under surface. Frontoclypeus somewhat narrower than 1/3 the width of head; ♂ opercula rather ovate or much rounded trianglar, overlapping at the inner bases. This group comprises 3 species occurring in Japan, China and Indo-China; 1 species is known only from 1 ♀ specimen.

The *intermedia* group

Very similar in the general appearance of body to the *facialis* group. Ventral lobes of pygofer very indistinct; innermost base of membranous lining under uncus lobe centrally sclerotized, forming a central inner support of the lobe; upper (dorsal) surface of theca not sclerotized in apical 1/2; theca long but fine towards apex with a pair of small spines on under surface at the tip; vesica everted very long, without process, protruding upwards. Lateral margin of pronotum scarcely sinuate; ♂ opercula ovate and very slightly triangular. This group is represented by only 1 species, mainly distributed in the E Himalayas.

The *corvus* group

Pygofer very large even in smaller species; a pair of ventral pygoforal lobes distinct with subacute apices extending inwardly and caudally in several species (smaller species); apex of theca with a pair of projections or wide dilatation at the lateral side or obliquely underside; vesica long, gently narrowed apicad, without a saccate process. Head as wide as pronotum; ♂ opercula of an obtuse triangle in shape, with the exception of a species with oval opercula, slightly overlapping or sometimes contiguous to each other; ♀ abdomen shorter than the length of head and thorax, and as the result, body-length of ♂♂ generally longer than that of ♀♀; ♀ 9th abdominal segment, including ovipositor, very

short. This group consists of 6 species, and subdivided into 2 subgroups. The range of distribution is southern China, Indo-China and the E Himalayas, partly extending as far westwards as W India.

The *exalbida* group

This unique group is composed of a single species, distributed in S India and Sri Lanka. Ventral lobes of pygofer distinct, with subacute tips; theca gently curved in apical 1/2, with a membranous leaf-shaped process including a linear sclerite at the tip and with highly raised protuberance on the apical upper surface; vesica straight and slender, not narrowed towards apex, without a saccate process. Dorsum of body not so grossy; ♂ opercula oval, overlapping each other.

The *diomedea* group

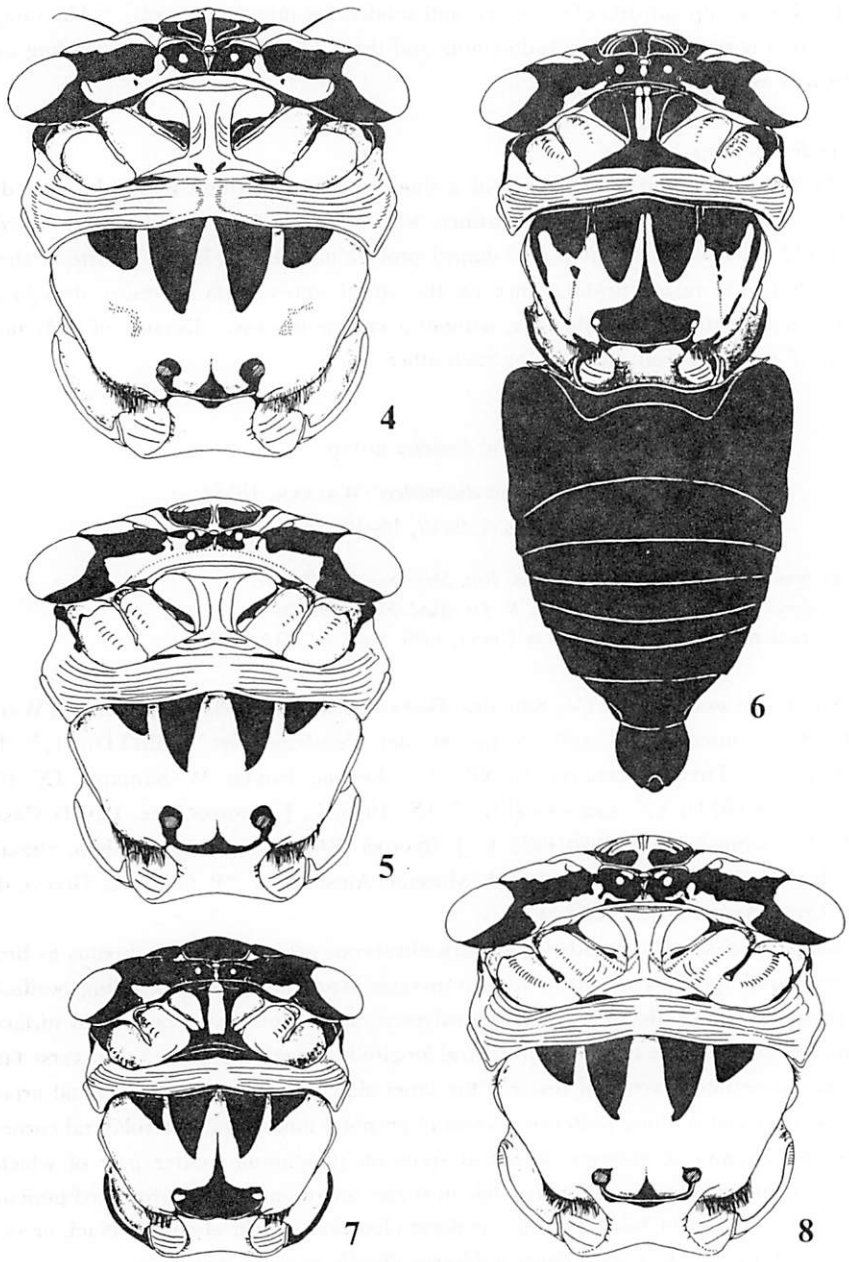
Cryptotympana diomedea (WALKER, 1858)
(Figs. 4, 9–12, 15–18, 38)

Fidicina diomedea WALKER, 1858, *List Hom. Brit. Mus., Suppl.*, **1858**: 18.
Cryptotympana diomedea: STÅL, 1862, *Öfv. K. Vet.-Akad. Förh.*, **19**: 483.
Cryptotympana diomeda [sic]: MOULTON & CHINA, 1926, *Suppl. ent.*, (14): 123.

Specimens examined. 1♀, Sumatra, DISTANT-Coll. 1911–383, det. "*diomedea* WALK." (BM); 1♀, Sumatra 591, coll. A. JACOBI, det. "*epithesia* Dist." (SMTD); 1♂, Ind. Néerlandaises, Tuyaerts-Lenaerts (ISNB); 1♂, Lebong Tandai, W. Sumatra, IX. 1912, C. J. BROOKS (BM); 1♂, same locality, 7. IX. 1916, C. J. BROOKS, Sec. Lawda Casa A (BM); 1♀, same locality, 1920/1923, C. J. BROOKS (BM); 1♀, Panning gahan, Sumatra, 1888, leg. M. WEBER, Coll. Zoölogisch Museum Amsterdam, "P. C. M. de Greeve det., 1964: *Cryptotympana* spec." (ZMA).

Large species. Head and thorax dark olivaceous green (reddish ochreous or brown in discoloured specimens) with a wide transverse fascia on vertex, including ocelli-area and periphery of eye, dorsal base of frontoclypeus, an obconical spot on frontal surface of frontoclypeus, clypeus except for the central longitudinal carina brown, a transverse fascia on gena, sometimes narrowed towards the inner side, an inner part of diagonal grooves and a narrow fascia along posterior margin of pronotal inner area, anterolateral corner of pronotum, 2 pairs of anterior obconical spots on mesonotum, outer pair of which is shortened and sometimes oblique triangle in shape, and a pair of small rounded punctures at the anterior part of basal arm of cruciform elevation, black; abdomen black or much infuscated brown clothed with dense gold-grey pilosity in good specimens.

Venter of body brown or reddish testaceous (often discoloured to ochreous) with mesoprepisternum and base of meracanthus on metameron black; legs testaceous with base of each trochanter, under surface and distal part of fore femur, fore tibia entirely, apical part of mid tibia, fore and mid tarsi, and claw black.



Figs. 4–8. Head and thoracic nota of the *diomedea* group. 4, *C. diomedea*; 5, *jacobsoni*; 6, *demissitia* with abdominal terga (holotype); 7, *brevicorpus* sp. nov.; 8, *epithesia*. Hairs on postocular area removed (same as most following figures).

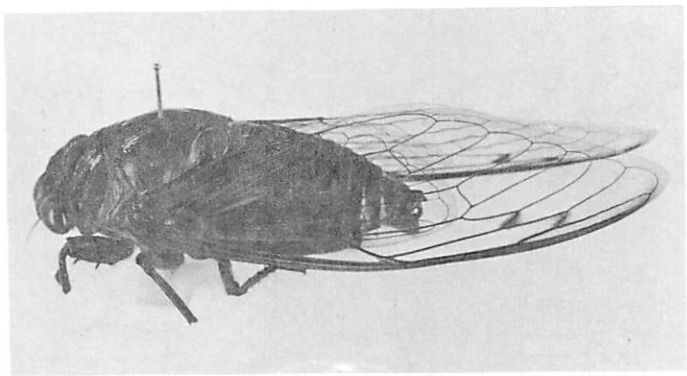
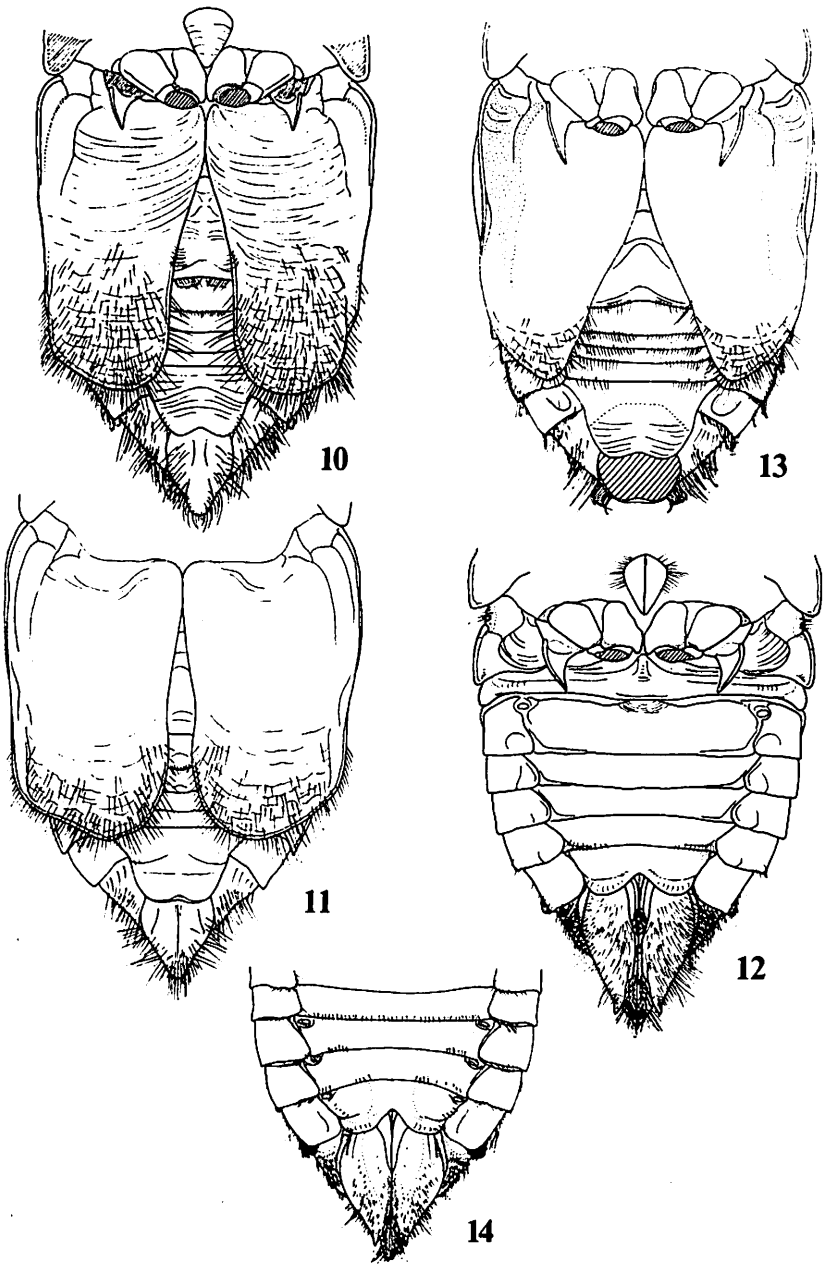


Fig. 9. *Cryptotympana diomedea*, ♂ (Sumatra; BM).

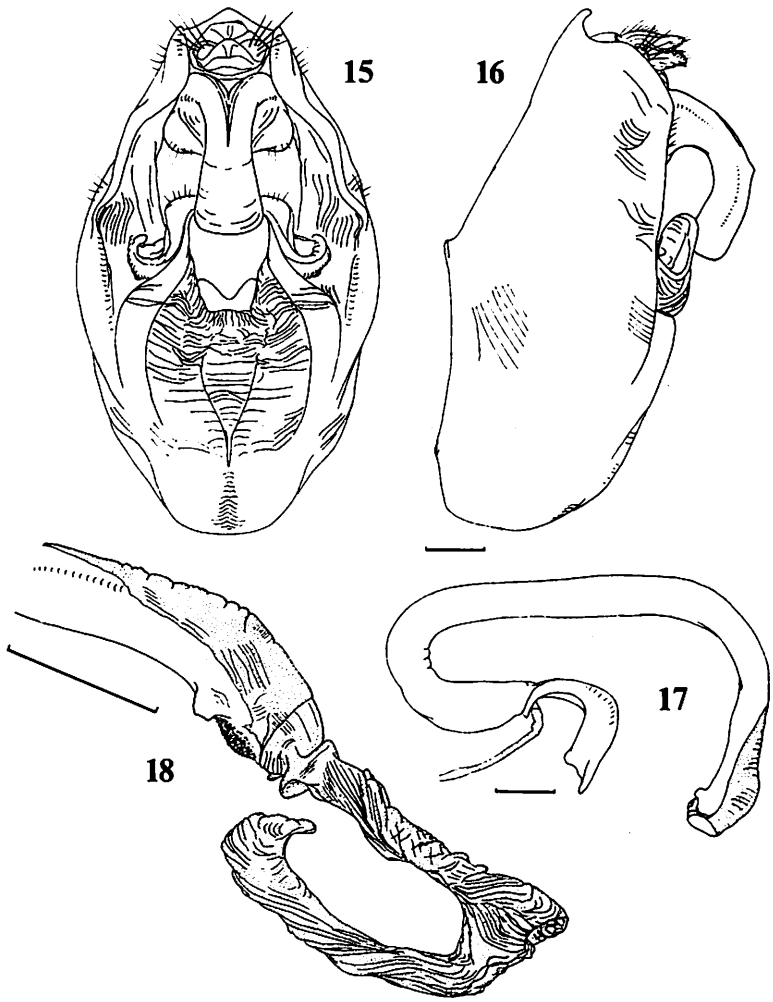
Wings hyaline; areas along apical margin of forewing faintly smoky; basal cell, basal 1/3 of cell 1A, area behind vein 2A opaquely black; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 obscurely infuscated; veins olivaceous green (often discoloured to reddish ochreous) basally and fuscous apically.

Head wide, 23.5–24.0 mm, and wider than pronotum; eye prominently expanded; frontoclypeus wide, roundly convex, 0.90–0.97× as long as wide in frontal view, possessing 5–6 transverse wide striations; labium extending to anterior angle of central metaprepisternal process; pronotum wide, 2.56× as wide as long, with posterolateral corner more or less widened; anterior part of inner diagonal groove of pronotum convex; mesonotum, distinctly longer than pronotum in median length, evenly convex with the posterior margin widely rounded; abdomen slightly shorter than head and thorax in dorsal median length; lateral process of ♀ meso- and metepimeron (operculum) with a tendency to direct outwards; ♂ operculum oblong with widely rounded or obliquely and obtusely truncate apex and reaching basal part of 7th abdominal segment, and the two opercula contiguous to each other at the extreme bases; ♂ 7th sternum retuse caudally; caudal margin of ♀ 7th sternum widely but not deeply incised at the middle; ♀ 9th segment small and obconical, ca 1.09× as long as wide in ventral view, and narrower than basal margin of 7th sternum, 0.76–0.77× as wide as the latter; forewing slender and long with acute apex, with costal margin slightly angled near node; vein CuP of forewing somewhat separated from vein 1A in basal 1/2; hindwing slightly longer than 1/2 of forewing.

Male genitalia (Figs. 15–18). Pygofer oval, widened near the middle and narrowed at the apex, ca 1.69× as long as wide in full ventral view, with a pair of ventral lobes distinctly projecting inwardly and caudally; uncus lobe stick-like, more or less angled, with central longitudinal sulcation towards base; theca with a short and wide flat projection and minutely dentate upheaval on the underside of apex; vesica long and narrow with a very long falcate sac (saccate process) at apex, directing backwards and distinctly longer than vesica itself.



Figs. 10–14. Abdomen in ventral view of the *diomedea* group. 10–12, *C. diomedea*; 13–14, *jacobsoni* (13, holotype). 10, 11, 13: ♂ —— 12, 14: ♀.



Figs. 15–18. Male genitalia of *C. diomedea*. 15, 16: Pygofer in ventral (15) and lateral (16) views. —— 17, 18: Theca (17) and its tip with vesica everted (18). Scales, 1 mm.

Body length: 47–50 mm. ——Total length*: 77–80 mm. ——Expanse of forewings: 142–152 mm.

Distribution. Sumatra.

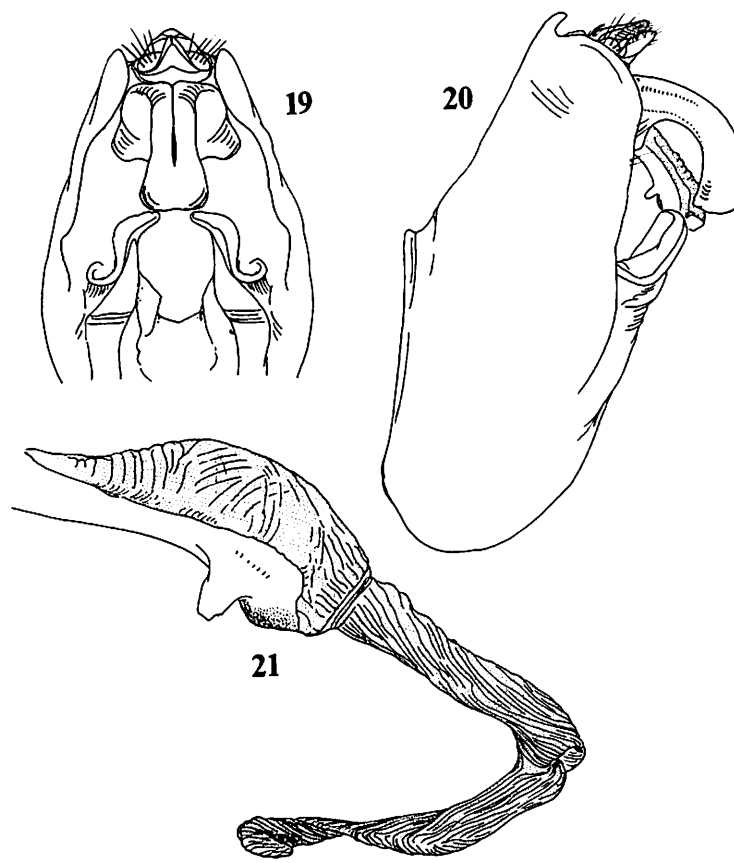
This species is confined to Sumatra. Although WALKER (1858) described the species from a ♀ specimen without locality, DISTANT (1891) fixed its type area to Sumatra with the description of a ♂. This species seems to be rather rare or localized to the montane areas of SW Sumatra, according to the data of the specimens that I have examined (Fig. 39).

* Total length: the distance from tip of head to apical end of forewing folded.

Cryptotympana jacobsoni CHINA, 1926
(Figs. 5, 13–14, 19–21)

Cryptotympana epithesia: MOULTON, 1925, *Treubia*, **6**: 435 (nec DISTANT, 1888).
Cryptotympana jacobsoni CHINA, 1926, *in* MOULTON & CHINA, *Suppl. ent.*, (14): 123.

Specimens examined. 1♂ (holotype), Anai Kloof (500 m), Sumatra's West kust, 1926, E. JACOBSON, "W. E. China det., 1926: *Cryptotympana jacobsont* China, TYPE" (handwriting) (BM); 1♂ (paratype), Fort de Kock (920 m), Sumatra, 1926, leg. E. JACOBSON, "W. E. China det., 1926: *Cryptotympana jacobsoni* China, PARATYPE ♂" (RML); 1♂, same locality and collector, "W. E. China det., 1926: *Cryptotympana jacobsoni* China ♂" (NMNH); 1♂, same locality and collector (BM); 1♂, same locality and collector (BM); 2♂♂ 1♀, same locality and collector, "W. E. China det., 1926:



Figs. 19–21. Male genitalia of *C. jacobsoni*. 19, 20: Pygofer in ventral (19) and lateral (20) views. —— 21: Apex of theca with vesica everted.

Cryptotympana jacobsoni China", "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (RML); 1 ♂, Fort de Kock, Sum., III. 1915, Edw. Jacobson, "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (RML); 1 ♀, Pad. Bovenl. (=Padangse Bovenlanden), 25. VII. 1893, A. L. v. Hasselt, Kay vetanem (?), "P. C. M. de Greeve det., 1964: *Cryptotympana diomedea* Walk." (RML); 1 ♂, Padang Pandjang, West-Sumatra, H. Rolle, Berlin W., Coll. A. Jacobi 1911–5, det. "*epithesia* Dist." (SMTD); 1 ♂, Loeboe Bangkoe, W. Sumatra, V. 1905, J. Menzel, "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (RML); 1 ♂, Tandj. Andalas, Sum., V. 1914, Edw. Jacobson, 2 40, "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (RML), 1 ♂, Sumatra, 1913 7, coll. A. Jacobi, det. "*epithesia* Dist." (SMTD); 1 ♂, Kg. Sahom, Malaysia, VIII. 1974, "Property of Osaka Museum of Natural History, Japan" (OMNH).

Very similar to *diomedea* in markings and coloration of body, but the body is somewhat slender. A transverse black fascia on gena wide, hardly narrowed even to margin of frontoclypeus; venter of body orange ochreous; thoracic sterna clothed with white pollinosity; ♂ operculum also pollinose laterally, and the white band gently narrowed to subapex.

Head about 21–22.5 mm wide, and at most 23 mm wide; pronotum ca 2.33× as wide as long; abdomen as long as or slightly longer than head and thorax in dorsal median length; ♂ opercula divergent caudally and contiguous basally, with apical margins obtusely angulate at the inner side and rounded at the outer side, and the apices not extending beyond 6th abdominal segment; ♀ 9th segment ca 0.73× as wide as basal margin of 7th sternum.

Male genitalia (Figs. 19–21). Pygofer narrower in lateral view; ventral lobes of pygofer long, with more or less elongate apices; uncus lobe evenly curved inwards, with central longitudinal sulcation in basal 2/3; theca widened with an apical flat projection longer than wide, angled and slightly dentate, and with upper membranous part expanded; a saccate process of vesica falcate, further long.

Body length: 43–51 mm. ——Total length: 67–80 mm. ——Expanse of forewings: 137–145 mm.

Distribution. Sumatra and Malay Peninsula (new record).

The localities of this species are concentrated on the central area of West Sumatra (Sumatera Barat); *jacobsoni* is probably restricted to that area and its neighbourings (Fig. 39).

China (1926; *in* Moulton & China) described this species on the basis of 2 ♂♂ from Sumatra, which had been recorded by Moulton as an allied species, *epithesia* Distant.

Judging from the shape of the ♂ genitalia, this species is probably more allied to *diomedea* rather than to *epithesia* (*vide infra*).

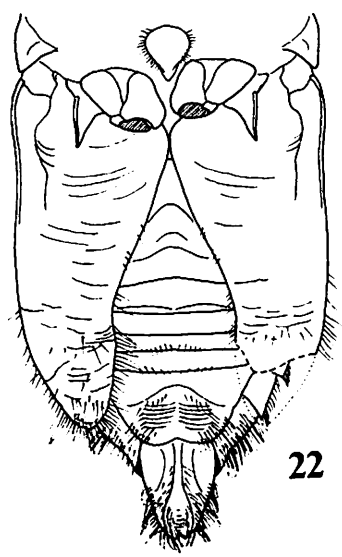
Cryptotympana demissitia DISTANT, 1891
(Figs. 6, 22, 24–26)

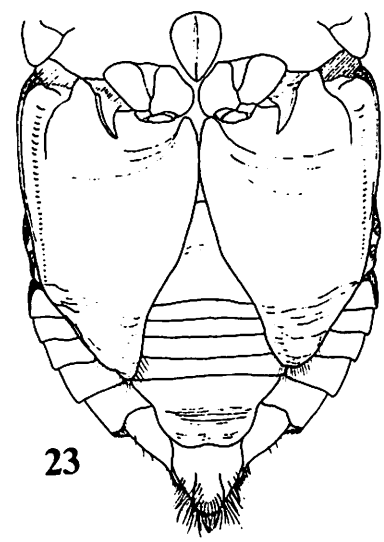
Cryptotympana demissitia DISTANT, 1891, *Monogr. Orient. Cicad.*, p. 89.

Specimens examined. 1♂ (holotype), Sumatra, DISTANT-Coll. 1911–383, DISTANT det. (handwriting) "*demissitia* Dist." (BM); 1♂, Poeloe Tello by Sumatra (=Poelautelo, Batu Isls.), A. L. v. HASSELT, "P. C. M. de Greeve det., 1964: *Cryptotympana diomedea* Walk." (RML); 1♂, without locality, Museum Natura Artis Magistra, "P. C. M. de Greeve det., 1964: *Cryptotympana* spec." (ZMA).

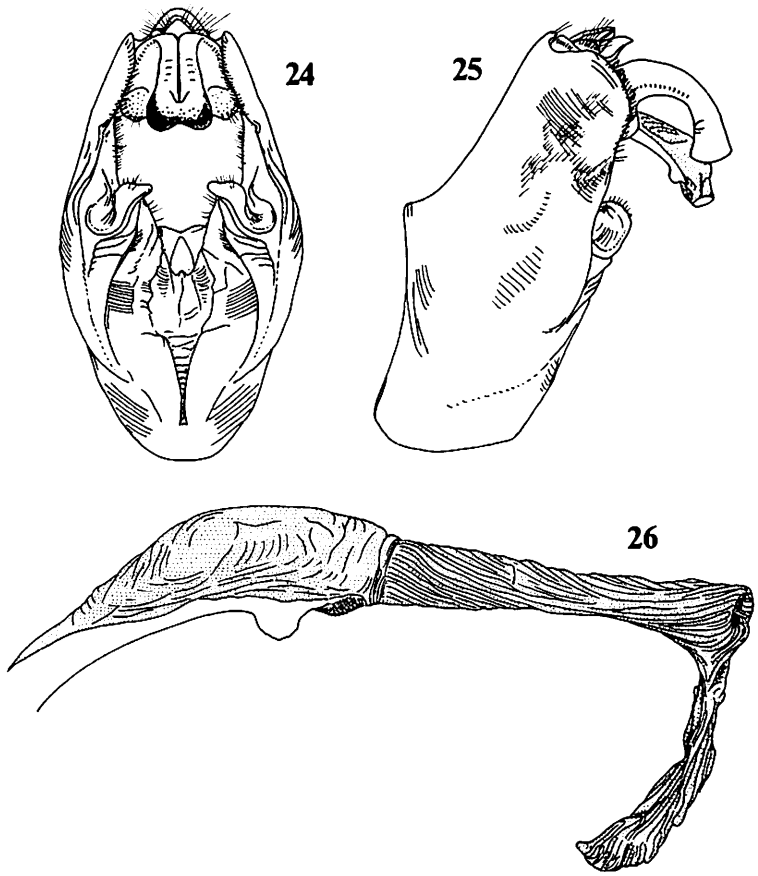
I was able to examine 3♂♂ specimens; 1♂ (holotype) is somewhat damaged and soiled, and the others are teneral, not tinted. The description of markings and spots is, therefore, entirely based on the holotype ♂.

Dorsum of body much more emphasized by black parts; head mostly black with a discal spot on anterior tip of frontoclypeus, a pair of spots on the inner lateral part of anterior margin, including outer part of supra-antennal plate, and a pair of irregulary shaped spots on the inner lateral surface towards the posterior margin, dull ochreous; pronotum dull ochreous with a central longitudinal stripe, much widened both anteriad and posteriad up to inner margin of the outer area (scutellum), including a central narrow dark ochreous spot, anterolateral corner of inner area, and extreme lateral and posterior margins, black; mesonotum dull ochreous with 4 anterior obconical spots, connected with each other anteriorly, a central discal spot on the posterior surface before cruciform





Figs. 22–23. Venter of abdomen. 22, *C. demissitia* (holotype); 23, *brevicorpus* sp. nov. (holotype).



Figs. 24–26. Male genitalia of *C. demissitia* . 24, 25: Pygofer in ventral (24) and lateral (25) views. —— 26: Apex of theca with vesica everted.

elevation, narrowly and lanceolately extending anteriad, a linear spot on lateral surface, and a band across basal arm of cruciform elevation, black; abdomen entirely black and grossy; venter of body darkened, dark reddish ochreous, with black parts reduced as in *diomedea* ; wings hyaline with basal 2/5–1/3 of cell 1A in forewing black or fuscous.

Frontoclypeus rather large, spherical with 5–10 transverse waved carinae; labium extending to the middle of central process of metepisternum; pronotum 2.3–2.5× as wide as long, with lateral margin oblique and sinuate; abdomen slightly longer than head and thorax in dorsal median length; operculum so long as extending to or beyond apical margin of 7th abdominal pleuron, with apex subacute and inwardly curved; caudal margin of 7th sternum widely rounded, somewhat truncate or emarginate at the middle; hindwing rather rounded in shape, with an ambient vein between veins CuA_1 and CuA_2 not so expanded outwards, and with veins CuP and 1A nearly straight.

Male genitalia (Figs. 24–26). Pygofer widened near middle in ventral view, ca 1.78× as long as wide, with a caudal beak short and obtuse, and with ventral lobes short and confronting at apices; uncus lobe evenly curved, apically thickened, with a central sulcation in basal 5/6 or more; theca rather thick, about the same size as that of *diomedea*, with an apical obtuse projection and with a narrow dentation at the apex; vesica everted long and cylindrical, with a falcate saccate process clearly shorter than vesica itself.

Body length (♂): 39–45 mm. ——Total length (♂): 60–68 mm. ——Expanse of forewings: 115–134 mm.

Distribution. Sumatra.

The 1 ♂ has been collected from "Poeloe Tello by Sumatra"; this locality is probably identical with Poeloetelo (Poelau Tello), Batu Islands situated off the west coast of Sumatra, north of the Siberut Isls. (Fig. 39). It is rather possible that the occurrence of *demissitia* is confined to the archipelago, "Batu".

Cryptotympana brevicorpus M. HAYASHI, sp. nov.

(Figs. 7, 23, 27–30)

Cryptotympana epithesia: MOULTON, 1923, *J. fed. Malay Stat. Mus.*, **11**: 135 (*partim*) ; MOULTON, 1925, *Treubia*, **6**: 435 (*partim*); MOULTON, 1929, *Bull. Raffles Mus.*, **2**: 121 (nec DISTANT, 1888).

Holotype: ♂, Nias Island, Sumatra W. C., Malaysia (Labelled at Sel: Mus. K. L.), Ex. F. M. S. Museum, B. M. 1955–354, MOULTON's handwriting "J. C. Moulton det., 22. vi. 22: *Cryptotympana epithesia* Dist. ?" (BM).

Paratype: 1 ♂, same data as holotype (BM).

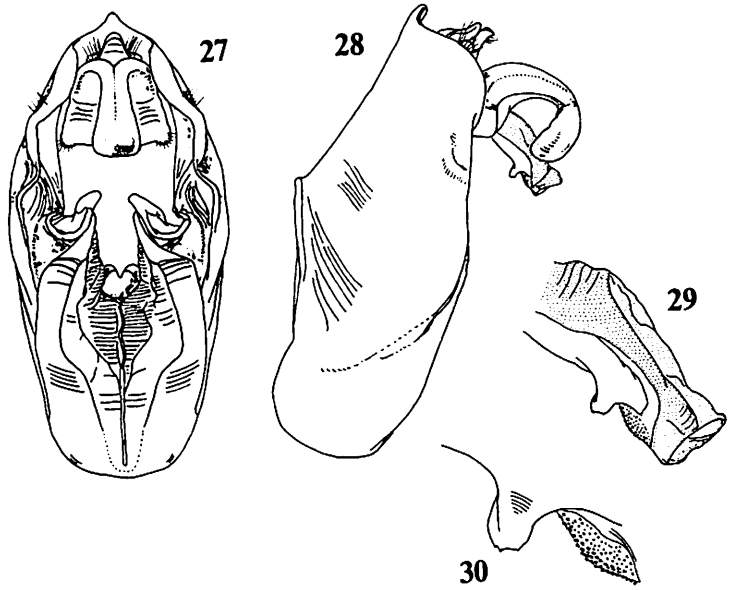
Type depository: British Museum (Natural History), London.

Very similar to *demissitia*, but differing in the wide abdomen. A central longitudinal black fascia on pronotum not so widened anteriorly; mesonotum with 4 obconical spots separated from eath other; anterior extension of central lanceolate spot on mesonotum not coming to the anterior margin; abdomen grossy black with innermost part of timbal covering brownish.

Venter of body greyishly pilose; head black; thorax and abdomen ochreous, more or less darkened, with mesobasisternum black; ♂ operculum and abdomen somewhat tinged with orange; fore and mid legs black with fore coxa, fore trochanter, underside of fore femur, mid coxa and trochanter and basal part of mid tibia (except for the extreme base), dull ochreous; hind leg dull ochreous with both base and apex of tibia and claw black.

Wings hyaline with basal cell ochreous; veins of forewing ochreous basally and fuscous apically, while those of hindwing fuscous with veins 1M, 2M, CuP and 1A ochreous; forewing with base of cell 1A and marginal area behind vein 2A black, and with fuscous spots appearing along 1st and 2nd cross veins (R_3–R_{4+5} and R_{4+5}–M_1).

Shapes of head and thorax also very similar to those of *demissitia*; pronotum, not so sinuate and oblique laterally, 2.12–2.20× as wide as long; abdomen nearly parallel-sided



Figs. 27–30. Male genitalia of *C. brevicorpus* sp. nov. 27, 28: Pygofer in ventral (27) and lateral (28) views. —— 29, 30: Apex of theca.

at basal 3 segments, 2nd–4th terga, and becoming conical towards apex behind 5th segment; frontoclypeus with 6–7 transverse striations on the surface; labium reaching middle of central metaprepisternal process; ♂ operculum long and slender with acute and narrowly rounded apex, reaching basal margin of 7th abdominal segment; 2nd segment ca 2/5 the abdominal length in dorsal view; abdominal pleura short and wide; 7th sternum wide at base, with rounded caudal margin, truncate or slightly emarginate at middle; wings also very similar in shape to those of *demissitia*.

Male genitalia (Fig. 27–30). Pygofer elongate, ca 2× as long as wide, widened behind middle, with ventral lobes short; uncus lobe gradually becoming wider towards apex with a shallow central sulcation in basal 2/3; apical flat projection of theca longer, about as long as wide, slightly indented.

Body length (♂): 38–40 mm. —— Expanse of forewings: 115–124 mm.

Distribution. Nias Island.

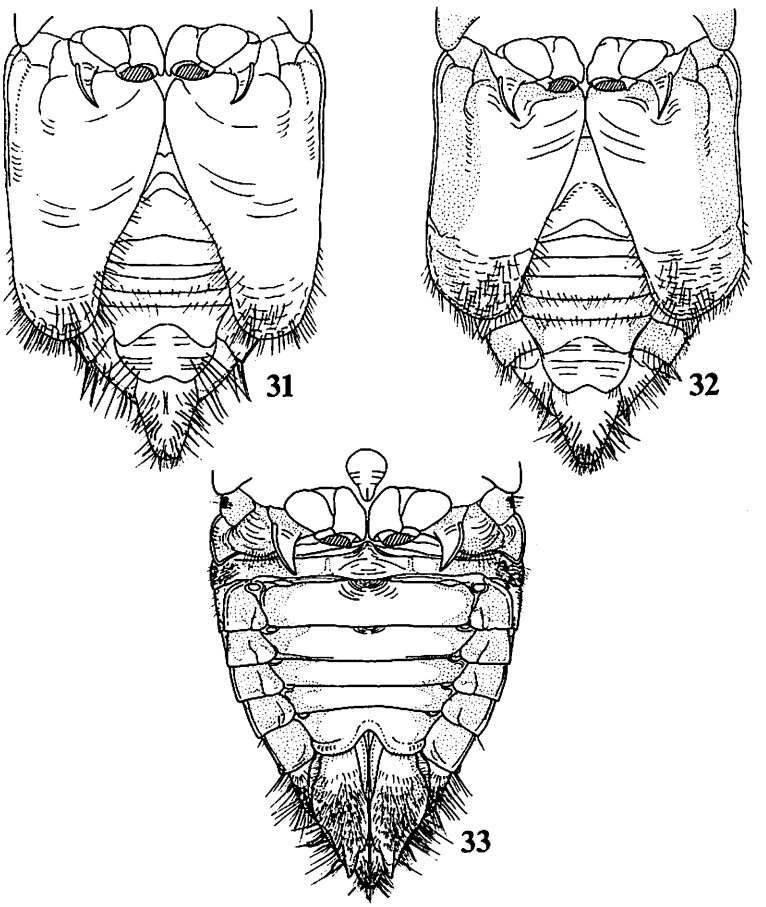
It is this species that was referred to *epithesia* DISTANT from Nias by MOULTON, who suggested the subspecific realtionship for each set of specimens of *epithesia* from Borneo, Sumatra and Siberut (MOULTON 1929). In the context of the 2♂♂ of *brevicorpus* from Nias, he gave no comments on the relation to *epithesia*.

This species, represented by only 2♂♂, is probably endemic to Nias (Fig. 39), and closely allied to *demissitia* from the Batu Isls., ca 100 km south of Nias.

Cryptotympana epithesia DISTANT, 1888
(Figs. 8, 31–38)

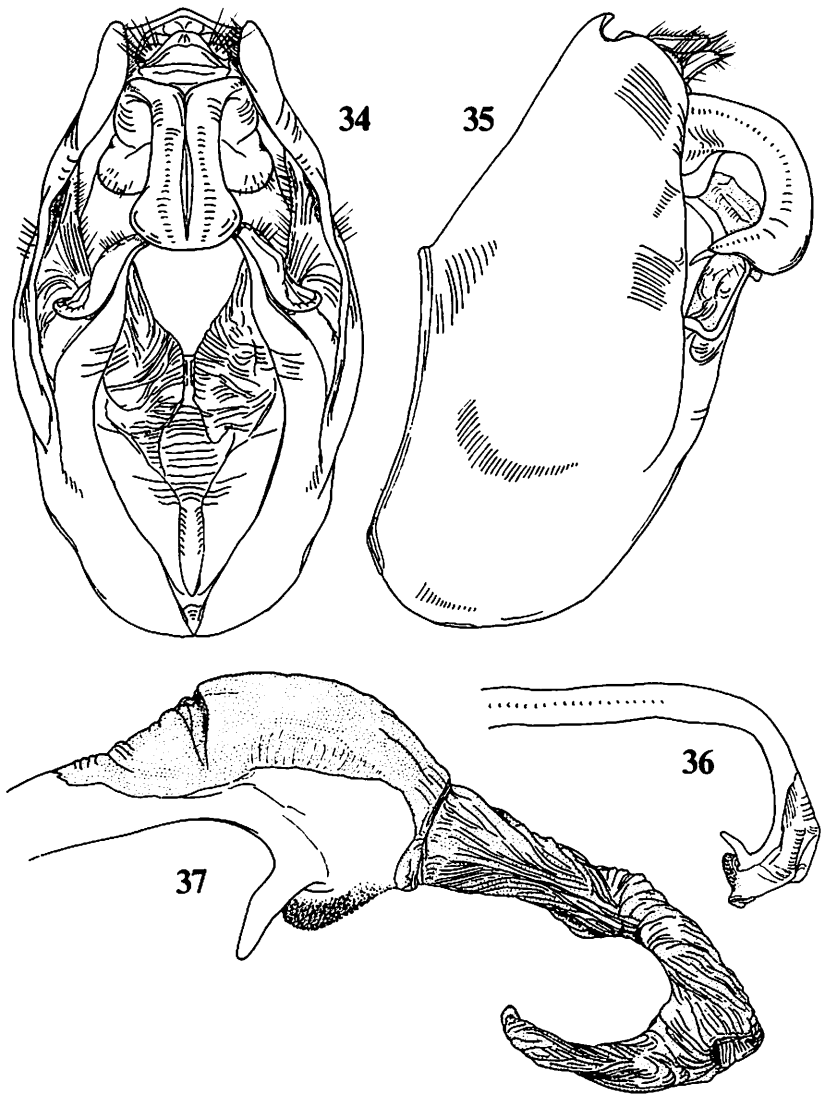
Cryptotympana epithesia DISTANT, 1888, *Ann. Mag. nat. Hist.*, (6), **2**: 325.

Specimens examined. 1♂, Borneo (BM); 1♀, Pontianak, Borneo W. K., 1907, v. d. BERGH, coll. Dr. D. MACGILLAVRY, "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (ZMA); 1♀, Sumatra, Coll. NONFRIED, DISTANT det. (handwriting) "*Cryptotympana epithesia* Dist." (ISNB); 1♂, Sumatra, Coll. NONFRIED (ISNB); 1♀, Sumatra, 27 28, Riksmuseum Stockholm (NRS); 1♀, Sumatra, DISTANT-Coll. 1911–383 (BM); 1♂ 1♀, Sumatra, A. GRUBAUER, B. JACHAN vend. 10–XII–1901 (ZMH); 1♀, Sumatra, B. JACHAN vend. 1–IV–1901 (ZMH); 1♂ 2♀♀, same locality, 861, coll. A.



Figs. 31–33. Venter of abdomen of *C. epithesia*. 31, From Borneo; 32–33, from Sumatra. Dotted area showing white pollinosity.

JACOBI, det. "*epithesia* DIST." (SMTD); 1 ♂, Bekri——Deli, Pantekoek, Sumatra, "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (RML); 1 ♀, Serdang, Sumatra, ded. 1. X. 1894, O. PUTTFARKEN, Prof. Dr. A. JACOBI determ. 1931 "*Cryptotympana viridipennis* Dist." (ZMH); 1 ♀, Singalang (2000'), W.-Sumatra, Coll. A. JACOBI 1911–5, det. "*epithesia* DIST." (SMTD); 1 ♀, Sibolangit, Sumatra O. K., 1912, v. d. BERGH, "*Cryptotympana ?diomedea* Walk. ♀, det. M'-Gill., III. 1931; coll. Dr. D. MacGillavry", "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China"



Figs. 34–37. Male genitalia of *C. epithesia*. 34, 35: Pygofer in ventral (34) and lateral (35) views. —— 36, 37: Apical 1/2 of theca (36) and the apex with vesica everted (37).

(ZMA); 1♀, Sibolangit (550 m), Sumatra's O. K., 1917, J. A. LOERZING, "P. C. M. de Greeve det., 1964: *Cryptotympana epithesia* Dist." (ZMA); 1♂, Medan, Sumatra, ex Coll. SCHOUTEDEN, labelled "*Cryptotympana epithesia* Dist., Sum., Medan" (ISNB); 1♂, same locality (MNP); 1♀, Deli, Sumatra, I. '04 (1904), WALDEIN, Museum Natura Artis Magistra, "P. C. M. de Greeve det., 1964: *Cryptotympana* spec." (ZMA); 1♀, same locality 12. X. 1895, W. BURCHARD (ZMH); 1♂, Padang Sidempoean (=Padangsidempoean, Res. Tapaloeli), Sumatra occid., J. D. PASTEUR, "P. C. M. de Greeve det., 1964: *Cryptotympana jacobsoni* Moult. & China" (RML); 1♀, Sumatra, "Vyane vend.: *Cryptotympana diomedae* !" (ISNB); 1♂, Sumatra, labelled "*Epithesia* Dist., Borneo" (MNP).

Very similar to *diomedea* , but differing in the following points: Central part of timbal covering widely dark ochreous; venter of body rather ochreous, sometimes clothed with white pollinosity laterally; head wider, and eyes more prominent, about as wide as in *diomedea* in spite of generally smaller-sized body than in the latter; frontoclypeus with 6–7 transverse wide carinae; labium extending posteriorly a little beyond middle of central metaprepisternal process; ♂ operculum, variable in size and/or length, divergent towards apex, with the inner margin approaching to the opposite but not overlapping basally, and with the apex more or less rounded and reaching 5th or 7th abdominal sternum; caudal margin of ♂ 7th sternum widely emarginate, and that of the ♀ sternum deeply incised at the middle; ♀ 9th segment obconical and rather wide, ca 1.06× as long as wide, and

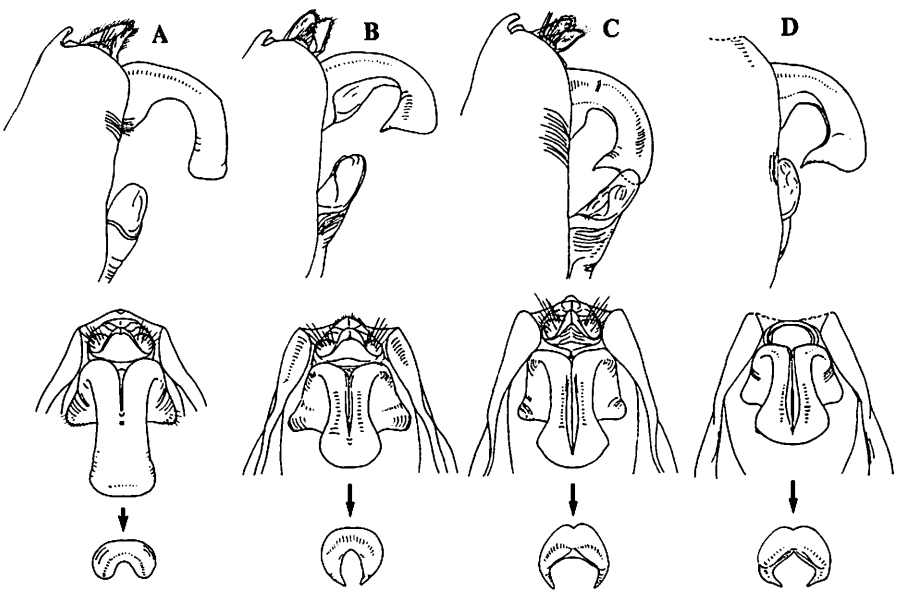


Fig. 38. Variation in the shape of uncus lobe in *C. epithesia* (B–D). For comparison, an example of *diomedea* (A) is also shown. B: From Medan, Sumatra (MNP). —— C: From Sumatra (ZMH). —— D: From Medan, Sumatra (ISNB). The lower row shows the apical view of uncus lobe.

slightly narrower than basal margin of 7th sternum, 0.76–0.84× as wide as the margin; forewing comparatively short; hindwing as long as or slightly shorter than 1/2 the length of forewing; etc.

Male genitalia (Figs. 34–37). Pygofer large and oval, widened before middle, ca 1.77× as long as wide, and a pair of ventral lobes longer; uncus lobe rather short, evenly and strongly curved inwards in lateral view, with a pair of long slender projections on under surface of the tip, strongly hooked, and with a central longitudinal deep sulcation, reaching the tip of uncus lobe; apical part of theca, widely convex on the upper side, with a very long slender projection and a high expansion composed of numerous minute spines on the underside; vesica long with a falcate saccate process at apex, which originates from the underside of apex, extends backwards and is clearly shorter than vesica itself.

Body length: ♂ 42–49 mm, ♀ 39–45 mm. ——Total length: 64–77 mm.——Expanse of forewings: 131–148 mm.

Among a series of specimens, there are several small-sized individuals from Sumatra; the body length is in the range of 42–43 mm (♂), against 47–49 mm (♂) in the larger (standard) ones. Both the types however, seem to fall within the infraspecific variation,

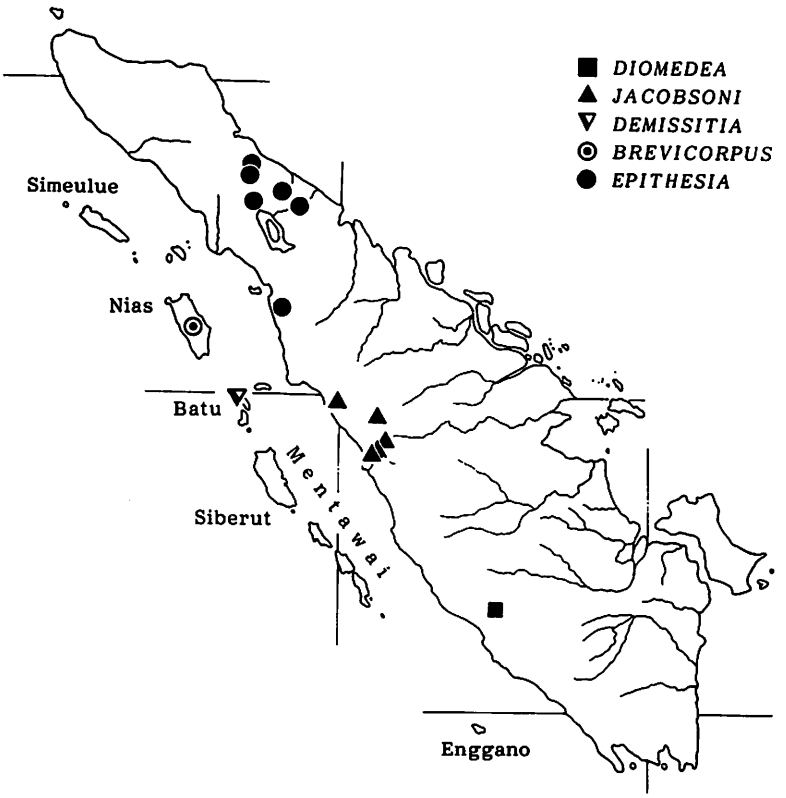
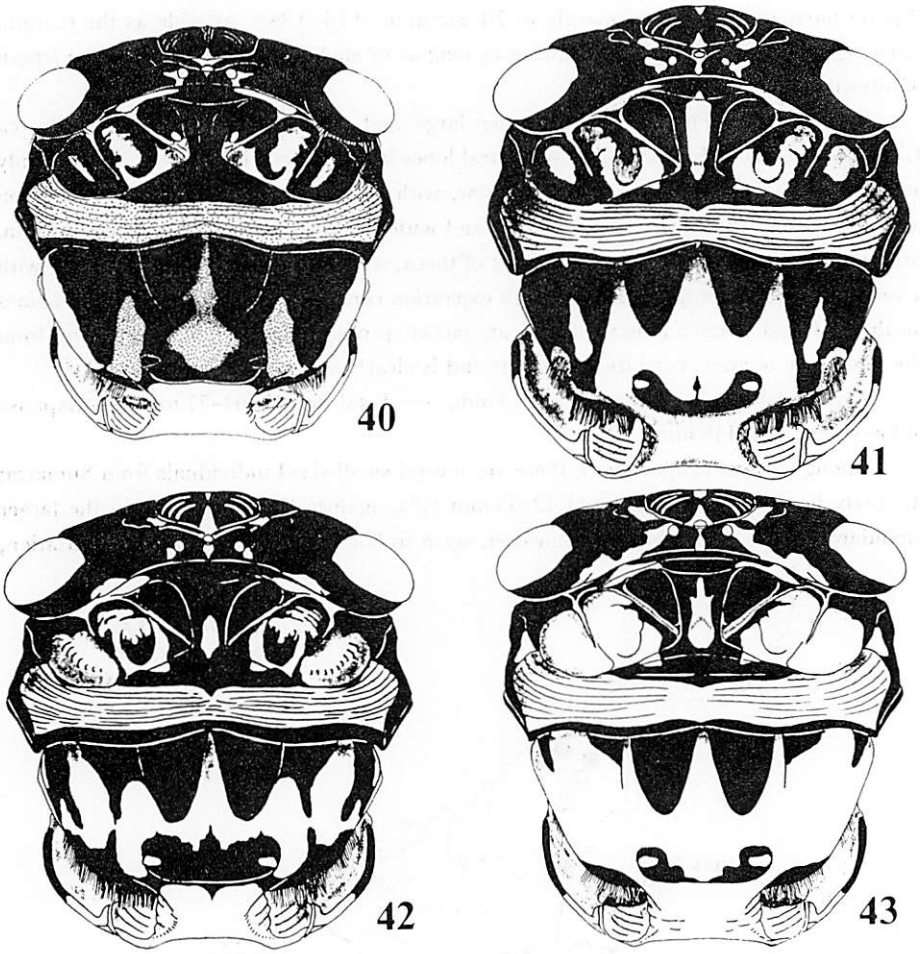


Fig. 39. Localities of all species of the *diomedea* group in Sumatra, based on specimens with sound data.

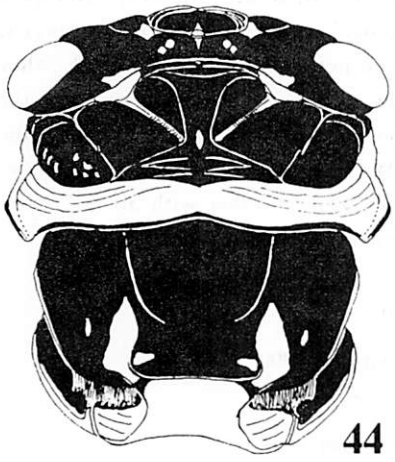


Figs. 40–49. Head and thoracic nota of the *acuta* group. 40, *C. niasana*; 41, *fumipennis*; 42, *acuta*; 43, *acuta* from the Kawie Mts., E Java; 44, *lombokensis* (holotype); 45, *izzardi* (holotype); 46, *ochromelas* sp. nov.; 47, *timorica* sp. rev.; 48, *alorensis* sp. nov.; 49, *wetarensis* sp. nov.

because there are no differences in the ♂ genitalia between them. Detailed discussion on this problem is reserved until a longer series of materials is available.

The 1 ♂ (smaller) specimen (MNP) from Medan, N Sumatra, shows some difference in the genitalia: uncus lobe highly protruding at proximal part, and strongly curved at subapex, with the tip not so wide and with a central sulcation not reaching near apex of uncus lobe; etc. Other morphological characters such as the hooked tip of uncus, the apical modification of theca, the shape of ♂ opercula, etc., lead this individual to the extent of *epithesia* DISTANT (Fig. 38 B–D).

Distribution. Borneo and Sumatra.



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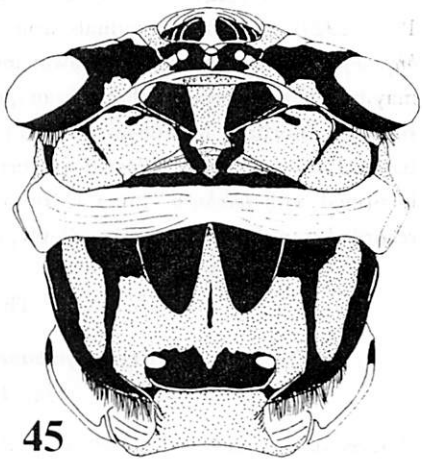

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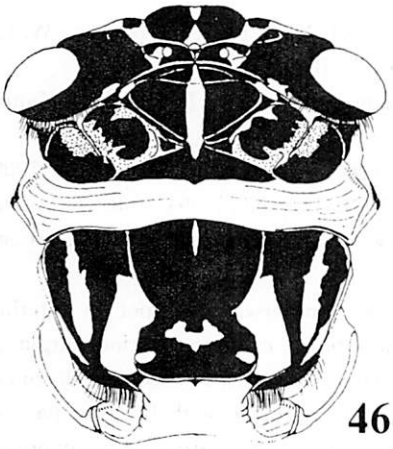

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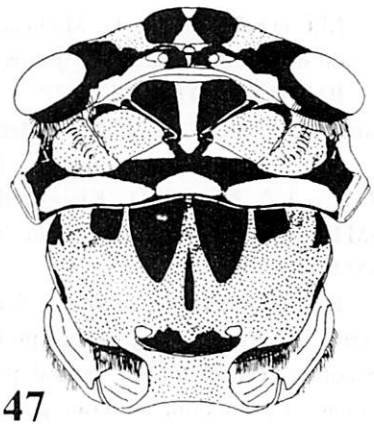

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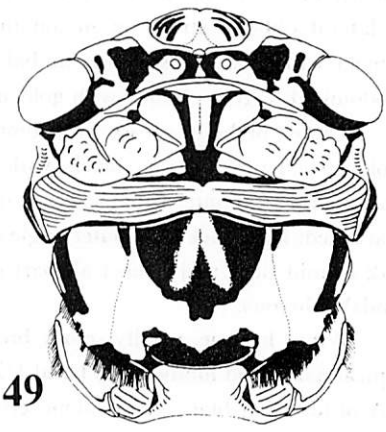


49

This species has been recorded also from Nias and Mentawai (Siberut) (MOULTON 1923, 1929), but the individuals from Nias are recognized as an independent species, *brevicorpus*. Although the Mentawai individuals were not available for this study, they may belong to a species diffirent from *epithesia*, in view of the occurrence of *demissitia* on the Batu Isls. north of Mentawai. MOULTON (1925) recorded *epithesia* from Sumatra on the basis of 1♀ specimen collected at Fort de Kock, W Sumatra; this individual was later identified with *jacobsoni* CHINA (MOULTON & CHINA 1926), together with all the others recorded from Sumatra. Accordingly, *epithesia* is new to Sumatra.

The *acuta* group

Cryptotympana niasana DISTANT, 1909
(Figs. 40, 50, 54, 56–60)

Cryptotympana niasana DISTANT, 1909. *Trans. R. ent. Soc. Lond.*, **1909**: 392.

LECTOTYPE: ♂, G. Madjeja, Noord Nias, XI–XII. 1893, MITSCHKE, W. L. Distant det. (handwriting) "*Cryptotympana niasana* Dist." (BM).

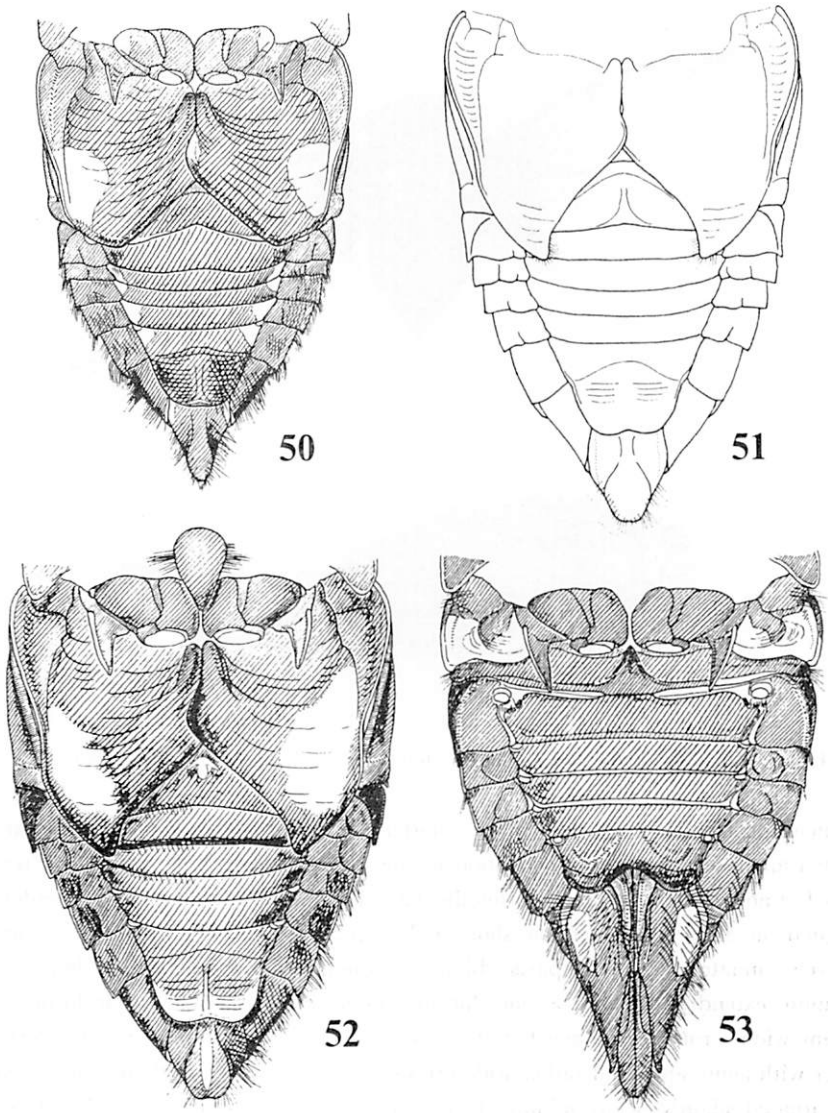
PARALECTOTYPES: 3♂♂ 1♀, same locality as lectotype (BM); 1♂, Kalim Bungo, M. Nias, 1. IX. 1896, R. MITSCHKE (BM).

Other specimens examined: 1♂, Eil. Nias, E.E.W.G. SCHRÖDER, don. 10. 1908 (RML); 1♂, Nias, 1911, Kleiweg de ZWAAN (RML); 1♂, Nias, 594, coll. A. JACOBI (SMTD); 2♂♂, Geonoeng Sitoli, Nias, H. ROLLE, Berlin, S. W. 11, coll. A. JACOBI (SMTD).

Head, thorax and abdomen black with a lateral transverse linear spot on anterior margin of vertex, inner posterior protrusion of gena, labrum, extreme anterior margin of pronotum (except for the central part), an irregularly shaped spot on inner diagonal carinae of pronotum, posterior part of pronotal collar, margined with black, a pair of longitudinal wide fasciae and a central rhombate spot on posterior surface of mesonotum, a lateral oblique stripe on mesonotum and cruciform elevation, dark ochreous, often tinged with olivaceous green; timbal covering much infuscated brown; central part of abdominal tergum clothed with golden pilosity.

Venter of body grossy and almost entirely blackish brown or black with minute gold-grey hairs; thorax black with pronotal paranotum, apex of meracanthus on metameron and outer subapical part of ♂ operculum ochreous to olivaceous, more or less darkened; legs black with outer angle of coxa, a several linear spots on each femur, apical 1/2 of mid tibia and almost all part of hind tibia (except for both the basal and apical ends) ochreous.

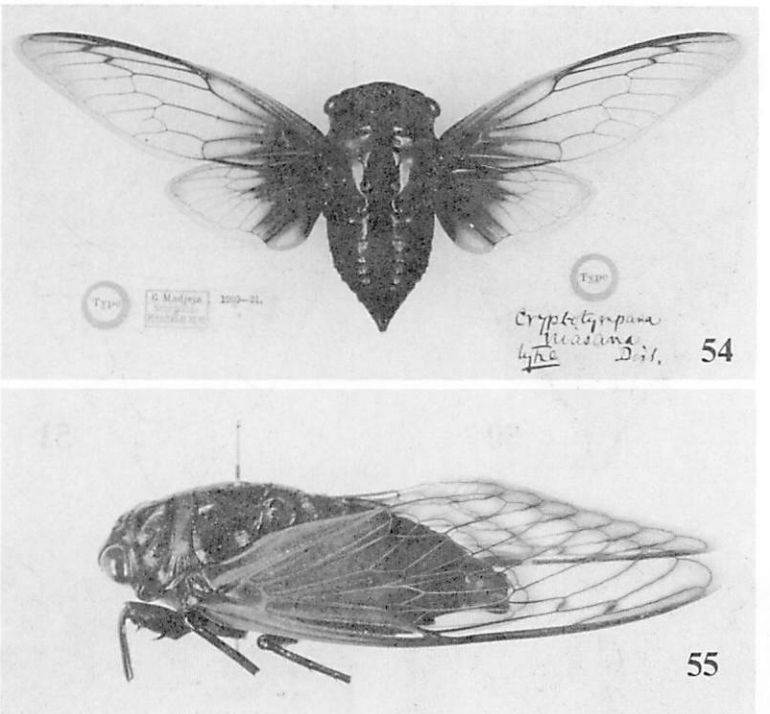
Wings hyaline, wholly smoky brown; forewing heavily smoky in both the basal and apical parts, and hindwing in basal 1/2 as well; basal cell and basal parts of cells CuA and 1A of forewing black; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 of forewing much infuscated though dimly; veins ochreous, tinged with green in fresh specimens, more or



Figs. 50–53. Venter of abdomen. 50, *C. niasana*; 51–53, *fumipennis* (51, from Siam; 52–53, from Sumatra).

less infuscated apically.

Body wide in proportion to length; head about as wide as pronotum; frontoclypeus somewhat depressed, ca 0.90–0.93× as long as wide in frontal view, bearing 7–8 obscure transverse striations on the surface; labium reaching near middle of central metaprepisternal process; mesonotum, excluding cruciform elevation, about as long as pronotum in median length; cruciform elevation wide, much depressed at the central part;

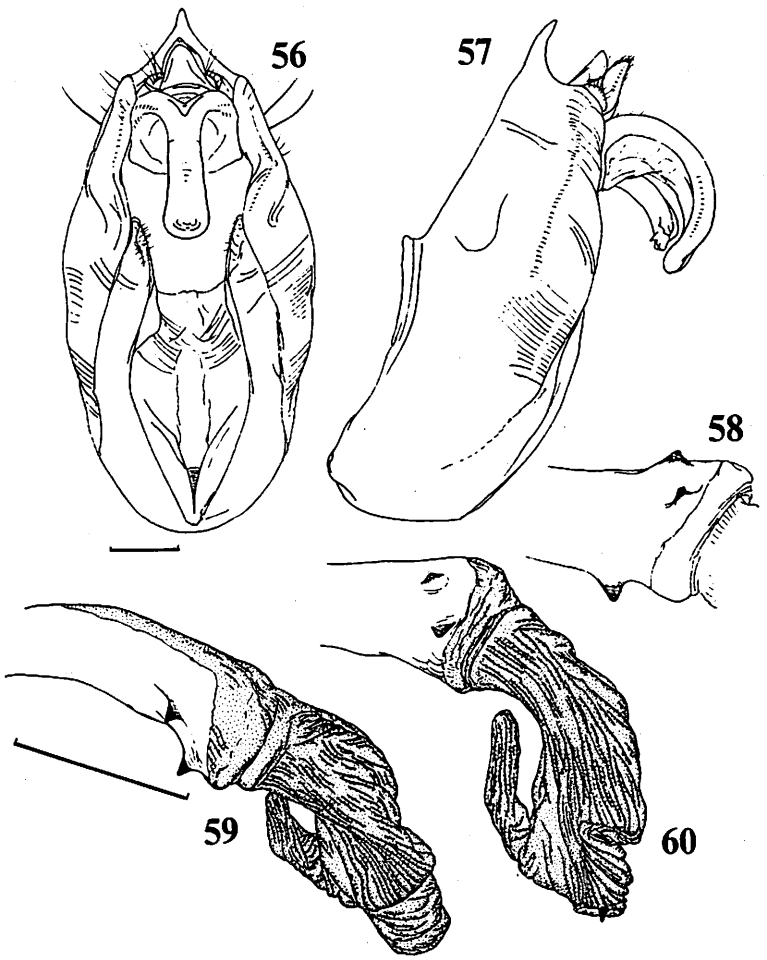


Figs. 54–55. 54: *Cryptotympana niasana* (lectotype, ♂; BM). —— 55: *C. fumipennis*, ♂.

abdomen obconical and relatively short, shorter than head and thorax in dorsal median length; timbal covering short in relation to the width; basal margin of ♂ 2nd tergum widely but not strongly expanded at middle; lateral dilatation of mesepimeron slender and triangular in shape; ♂ opercula short and angulate, with outer margins somewhat concavely sinuate and apical parts obliquely straight, overlapping at the inner bases; operculum extending slightly beyond 2nd abdominal sternum; caudal margin of ♂ 7th sternum widely rounded, somewhat truncate or emarginate near the middle; forewing slender with acute apex and rather wide precostal membrane, wider than vein C at base; node situated slightly before middle of forewing; stalk of veins 1M and 2M in forewing very short, much shorter than vein 1M before nodal line; hindwing rather short with acute apex.

Male genitalia (Figs. 56–60). Pygofer widened behind middle, ca 1.82× as long as wide, with rather developed central caudal beak; uncus lobe very long and attenuate, evenly curved inwards, with the tip rather truncate; apical surface of the lobe narrowly emarginate; theca widened towards apex, bearing 3 acute spine-like projections at apex, situated at both lateral sides and underside; vesica everted moderately curved to the right, and a little widened apicad, with a narrow saccate process at the tip directing backwards.

Body length: 37–41 mm. ——Total length: 59–61 mm. ——Expanse of forewings:



Figs. 56–60. Male genitalia of *C. niasana*. 56, 57: Pygofer in ventral (56) and lateral (57) views. —— 58: Underside of thecal apex. —— 59, 60: Apex of theca with vesica everted in lateral (59) and obliquely ventral (60) views. Scales, 1 mm.

111–119 mm.

Distribution. Nias.

Cryptotympana fumipennis (WALKER, 1858)

(Figs. 41, 51–53, 55, 61–64)

Fidicina fumipennis WALKER, 1858, *List Hom. Brit. Mus., Suppl.*, **1858**: 17.
Cryptotympana fumipennis: STÅL, 1862, *Öfv. K. Vet.-Akad. Förh.*, **19**: 483.
Cryptotympana viridipennis DISTANT, 1911, *Ann. Mag. nat. Hist.*, (8), **8**: 133. (**syn. nov.**)

Cryptotympana viridipennis var. *infuscata* CHINA, 1926, *in* MOULTON & CHINA, *Suppl. ent.*, (14): 124.

LECTOTYPE: ♂, Siam, Bowring, WALKER det. (handwriting) "*fumipennis* W" (BM).

PARALECTOTYPES: 1♂, same locality as lectotype (BM); 1♂, Sumatra, Raffles Col. (BM).

Other specimens examined. 1♂, Siam (BM); 1♂, Sumatra, KRICHELDORFF ded. 1937, "Jacobi det., Nov. '42: *Cryptotympana viridipennis* Dist." (IPK); 1♂, Sumatra, LUDEKING, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♂, Sumatra, Museum Leiden verz. J. J. de Vos tot Nederveen Cappel, "P. C. M. de Greeve det., 1964: *Cryptotympana aquila* Walk." (RML); 1♀, W. Sumatra (ZMH); 1♂, Sumatra's Westkust, 24. XI. 1923, coll. MACGILLAVRY, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♂, Archipelago Ind. orient., Habcha (?), coll. Dr. D. MACGILLAVRY, "McGill. det.: *Cryptotympana fumipennis* Walk." (RML); 1♀, Gro... (unable to decipher!) Tapanoeli, Sumatra occid., HEYTING, "P. C. M. de Greeve det., 1964: *Cryptotymapan fumipennis* Walk." (RML); 1♂, Lebong Tandai, W. Sumatra, 1917, C. J. BROOKS (BM); 1♂, Padang, W. Sumatra, 1919, R. MACGILLAVRY, coll. Dr. D. MACGILLAVRY (ZMA); 3♂♂, Padang (13), "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♂ (paratype of *viridipennis* var. *infuscata*), Padang Aarap (700 m), Sumatra's Westkust, 1926, E. JACOBSON, "W. E. China det., 1926: *Cryptotympana viridipennis* Dist. var. *infuscata* China", "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♂ 1♀, Padang. Bovenland., Sumatra, J. HASSELT, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♂, Montes Battak, Sumatra, ex. coll. FRUHSTORFER (ISNB); 1♀, Fort de Kock, Sumatra, "J. P. Duffels det., 1976: *Cryptotympana* spec." (NMNH); 1♂, same locality, Ed. R. JACOBSON (ZMA); 1♂ 1♀, same locality, III. 1915, Edw. JACOBSON, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♀, same locality and collector, IV. 1914 (RML); 1♂ 1♀, Fort de Kock (Pad. Bovenl.), Sumatra, II. 1914, E. JACOBSON, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♀, Fort de Kock (920 m), Sumatra, 1925, E. JACOBSON, "W. E. China det., 1926: *Cryptotympana viridipennis* Dist. var. *infuscata* China, ♀", "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♀, same locality, "J. C. Moulton det., 1926: *Cryptotympana viridipennis* Dist. ♀", "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1♂, same locality, 1926, E. JACOBSON, "W. E. China det., 1928: *Cryptotympana viridipennis* Dist. var. *infuscata* China" (ZMA); 1♂, same locality and collector, III. 1922, "W. E. China det., 1926: *Cryptotympana viridipennis* Dist. var. *infuscata* China, ♂" (NMNH); 1♂, Siboga, Sumatra, IV. 1886, MODIGLIANI, coll. NOUALHIER, det. "*Cryptotympana acuta* Signoret" (MNP); 1♂, Siodak Daras (3,100 ft), Korinchi, H. C. R. (=H. C. ROBINSON) & C. B. K. (=C. BODEN-KLOSS), ex. F. M. S. Museum, DISTANT det. (handwriting) "*Cryptotympana viridipennis* Distant" (BM); 1♀, Sangai Penoh (2700 ft), Korinchi, H. C. R. & C. B. K., ex. F. M. S. Museun (BM); 1♂, Mt. Dempo, S.

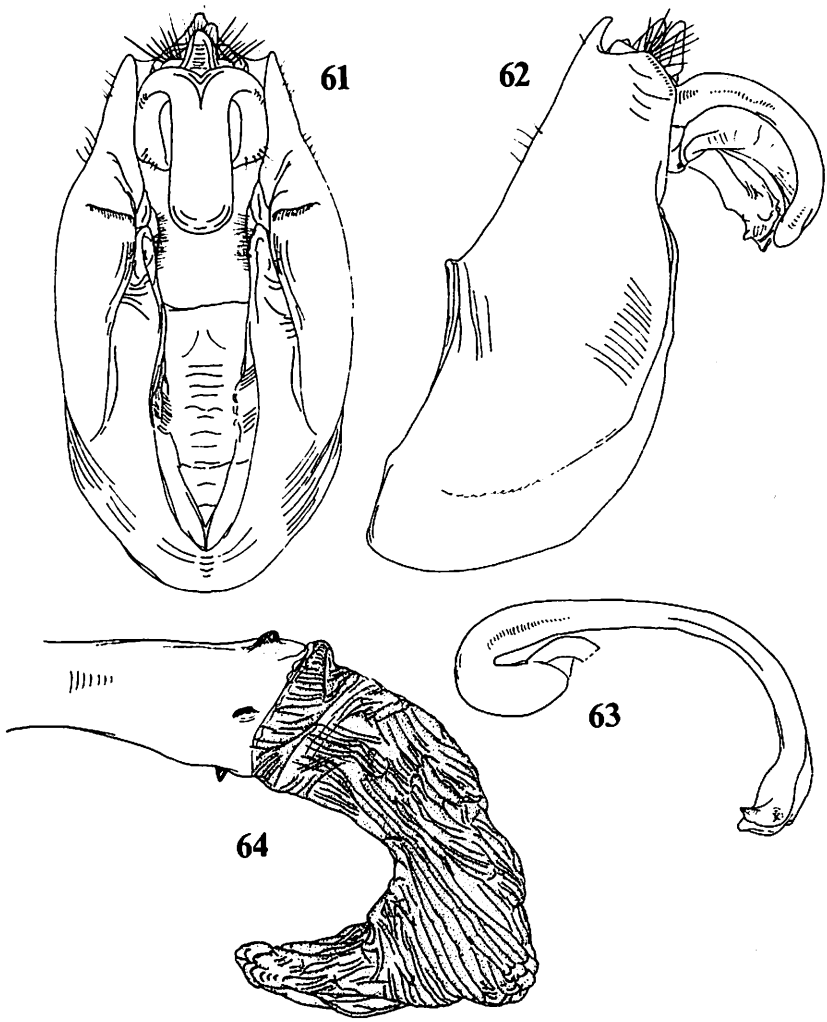
Sumatera, Indonesia, XII. 1985 (MH); 1 ♂, Sourabaja, Java, 9. I. 1936, H. CHRISTOFER, 49, "Prof. Dr. A. Jacobi det., 1934: *Cryptotympana viridipennis* Dist." (ZMH); 1 ♂, Ebolowa, Süd-Kamerun (!), Dr. M. KNOTH comm., Eing. Nr. 130, 1929 (ZMH); 1 ♂, without locality, Museum Natura Artis Magistra — Patria ignota, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML); 1 ♂, without locality, Patria···(not inscribed), W. WAGNER ded. Eing. Nr. 2, 1956 (ZMH); 1 ♂, without locality, "P. C. M. de Greeve det., 1964: *Cryptotympana fumipennis* Walk." (RML).

Large species; body well lustrous; head and pronotum black with a spot on supra-antennal plate, a central longitudinal narrow fascia on frontoclypeus, labrum, a triangular spot on base of frontoclypeus (tylus), a small spot on vertex, situated near outer part of basal ocellus, anterior margin of pronotum (by individuals), a central longitudinal fascia on pronotum, interrupted both anteriorly and posteriorly, inner diagonal carinae (at central parts) of pronotum and posterior collar of pronotal outer area except for the extreme margin, dark ochreous; mesonotum dark castaneous with a pair of central anterior obconical spots, a large lateral obconical spot, spread widely over the lateral surface, possessing an irregularly shaped brown spot or fascia, and a narrow transverse fascia just before base of cruciform elevation, black; spots composed of dense golden hair-tuft scattered on anterolateral angle and posterolateral corner of mesonotum; abdomen grossy black with timbal covering much infuscated brown laterally and with apical margin of ♂ 1st tergum (by individuals), a central spot on ♂ 2nd tergum (by individuals) and a linear longitudinal spot on ♀ 9th tergum at middle dark brown.

Venter much infuscated or black with minute golden pilosity, and with pronotal paranotum, tip of trochantin, apex of central process of metaprepisternum, outer margin of meracanthus, outer part of ♂ operculum widely, apical marginal area of ♂ 7th sternum (by individuals), a central longitudinal stripe and a lateral spot (by individuals) on ♂ 8th sternum (subgenital plate), and an oblong spot on outer basal part of ventral side of ♀ 9th tergum, paler, dark ochreous or dark brown; legs black with underside of mid and hind femora and basal part of hind tibia excepting the end ochreous.

Wings opaque and pale green in basal 1/2, before nodal line in forewing, and translucent and brownish fumeus in apical 1/2; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 of forewing, apical margins of both wings and vannus (cell 2A) of hindwing much more smoky; basal 1/7–1/5 of cell 1A of forewing, extreme base of cells 1st R_3, 1st R_5, M and CuA of hindwing, basal 1/2 of cells CuP and 1A of hindwing, and basal membrane, including axillary cord, opaquely black; veins green basally, generally before nodal line in forewing, and fuscous brown to black apically.

Head narrow in proportion to basal width of pronotum, with lateral expansion of postocular area not beyond pronotal base, as wide as or slightly narrower than pronotum, and wider than base of mesonotum; supra-antennal plate slightly swollen anteriad; transverse carinae on frontoclypeus waved, 8–10 in number; labium extending to near middle of metaprepisternal process; mesonotum as long as or slightly longer than pronotum in median length; abdomen slightly longer than head and thorax in dorsal



Figs. 61–64. Male genitalia of *C. fumipennis*. 61, 62: Pygofer in ventral (61) and lateral (62) views. —— 63: Theca. —— 64: Apex of theca with vesica everted in obliquely ventral view.

median length; ♂ operculum triangular, not so long, extending to but not beyond 4th abdominal sternum, with inner margin concavely sinuate, and with tip acute and directing inwards; both opercula of ♂♂ slightly overlapping each other at the basal inner margins; ♂ 7th sternum slightly emarginate at middle; ♀ 9th segment of elongate triangle in shape, ca 1.39× as long as wide; valvulae (ovipositor and sheath) extending slightly beyond 9th segment; costal membrane of forewing developed at base; primary forking of vein M to 1M and 2M very basal as in the other species of the *acuta* group; vein CuP of forewing well separated from vein 1A at basal 4/5.

Male genitalia (Figs. 61–64). Pygofer oval, widened behind middle, with caudolateral corner angulate; ventral pygoforal lobes very narrow; uncus lobe wide and relatively narrow in lateral view, evenly curved inwards, with an obtuse process, slightly hooked, and with the tip evenly rounded; theca thick with 3 distinct spines at apex, situated on the underside and under lateral sides; vesica everted very wide and relatively short, with a short saccate process at apex, which is thickened basad and extending nearly perpendicularly to ejaculatory duct (vesica itself).

There are some individual variations in the markings and spots on the body, especially in the coloration (brightness of green tinge) and infuscation of wing cells on the basal and apical halves, respectively. The individuals emphasized with green tinge have been treated as a different species, *viridipennis* DISTANT; it is most probable that this was named merely on the basis of fresh specimens. Since no differences are found in the ♂ genitalia between the two forms, *viridipennis* is doubtless a synonym of *fumipennis* (WALKER).

Body length: 42–48 mm. ——Total length: 62–72 mm. ——Expanse of forewings: 126–140 mm.

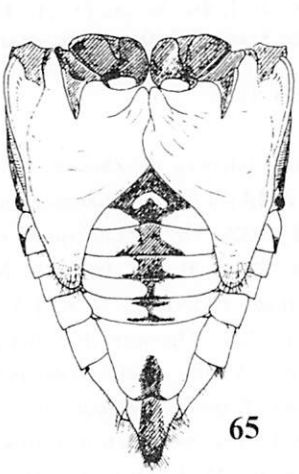
Distribution. Malay Peninsula (Lower Thailand and West Malaysia) and Sumatra. A record of *fumipennis* from Java seems to be erroneous and need further confirmation.

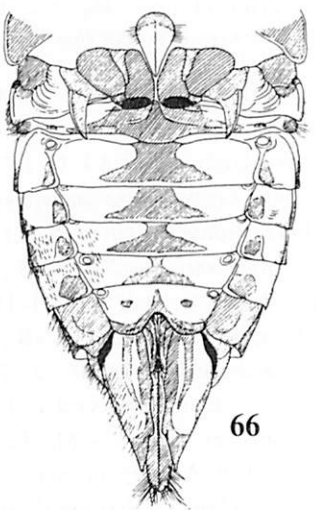
Cryptotympana acuta (SIGNORET, 1849)
(Figs. 42–43, 65–73)

Cicada acuta SIGNORET, 1849, *Rev. Mag. Zool.*, **1**: 409.
Fidicina acuta: WALKER, 1850, *List Hom. Brit. Mus.*, **1**: 81.
Cryptotympana acuta: STÅL, *Ann. Soc. ent. Fr.*, (4), **1**: 613.
Cicada vicina SIGNORET, 1849, *Rev. Mag. Zool.*, **1**.: 410; STÅL, 1861, *Ann. Soc. ent. Fr.*, (4), **1**: 613.
Fidicina navifera WALKER, 1850, *List Hom. Brit. Mus.*, **1**: 81; STÅL, 1862, *Öfv. K. Vet.-Akad. Förh.*, **19**: 483.
Fidicina blicolor WALKER, 1852, *List Hom. Brit. Mus., Suppl.*, **4**: 1121.

Specimens examined. BALI: 1♂, den Pasar, Kleiweg de ZWAAN, "P. C. M. de Greeve det., 1964: *Cryptotympana consanguinea* Dist." (ZMA); 1♀, Tjandikoesoema, Bali W., 25–27. IV. 1932, Prince LÉOPOLD, Roi LÉOPOLD III, 1932, "Dr. V. Lallemand det., 1934: *Cryptotympana viridipennis* Dist." (ISNB); 1♂, Ins. Bali, 20. X. 1976, I. MATSUURA (NSMT); 16♂♂ 17♀♀, Bali Is., III–IV., Y. FUJIOKA (NIAES). —— JAVA: 1♂ 2♀♀, Süd Java, FRUHSTORFER (ISNB); 1♂, same data, DISTANT det. (handwriting) "*Cryptotympana acuta* Sign." (ISNB); 2♂♂ 1♀, Java, "Vyane vend.: *Cryptotympana acuta* Sg." (ISNB); 2♂♂, Java, DISTANT det. (handwriting) "*Cryptotympana acuta* Sign." (ISNB); 1♂, Java, "Eminaster. Amyot — Ms. Paris — Sudamerica. Spécimen historique (coll. et étiquette de C. J. B. Amyot) et dét. et étiquette de W. L. Distant", DISTANT det. "*Cryptotympana acuta* Sign. — écriture de W. L. Distant" (MNP); 2♀♀, Java, W. WAGNER ded., Eing. Nr. 2, 1956 (ZMH); 1♂ 1♀, Java, H. SCHULZ, Eing. Nr. 1, 1953. — W.

WAGNER ded. (ZMH); 1♂, Java, "J. C. Moulton det., 21/9/'21: *Cryptotympana acuta* (Sign.)" (NMNH). —— East JAVA: 1♂, Banjoewangi, Java, 1911, MACGILLAVRY (ZMA); 2♂♂ 1♀, same data, DISTANT det. (handwriting) "*Cryptotympana acuta* Sign." (RML); 2♂♂, Pasanggrahan, Noamplang Garoet, 15. V. 1932, Prince LÉOPOLD, "Dr. V. Lallemand det., 1934: *Crytotympana acuta* Sign.", Roi LÉOPOLD III, 1932 (ISNB); 1♂ 1♀ 1 nymph(♂), Malang, Java, WIEDERHOLD (ISNB); 1♂, Bondowoso, E. Java, Indonesia, III. 1972, K. UMEYA leg. (MH); 1♂ 1♀, Mts. Kawie, Java (ISNB); 1♀, same locality, coll. E. de BERGEVIN (MNP); 1♀, Montes Tengger (4,000 ft), Java orient., 1890, H. FRUHSTORFER, "Java — H. Fruhstorfer vend. 10. II. 1894" (ZMH); 2♂♂, same data (BM). —— Middle JAVA: 4♂♂ 1♀, Rolt (?), Diergaarde, Soembing, Java, 1900, E. N. PELT (RML); 2♂♂, Salatiga, Jaba, X. 1908, W. D. v. L. (=LEEUWEN), Museum Leiden verz. H. v. d. VAART, det. "*Cryptotympana acuta* Sign." (RML); 1♂ 1♀, Luobeking, Ambarawa (RML); 1♂, Bojolali, M. Java, VII. 1915, P. BUITENDIJK (RML); 1♀, Semarang, IV. 1921, P. BUITENDIJK (RML); 1♀, Java merid. (1,500 ft), 1891, H. FRUHSTORFER, Museum Leiden ex Verz. Z. D. GRONINGEN (RML); 2♂♂, same data, coll. NOUALHIER (MNP); 1♂, Palabuan, Java merid., 1892, H. FRUHSTORFER, "Fruhstorfer vend. 20. XII. 1902" (ZMH). —— West JAVA: 2♂♂ 1♀, Sindanglaja, Java, 16. III. 1930, NERBELL (NMB); 1♂, Soekaboemi, Java, F. WEBER (NMB); 13♂♂ 7♀♀, same locality (ISNB); 1♀, same locality, 3. V. 1908, E. CORDIER, coll. C. de BÉARN/croisière du "Nirvana" (MNP); 6♂♂, same locality, Coll. LE MOULT, "Le Moult vend. via Reinbek — Eing. Nr. 1, 1957" (ZMH); 1♀, Soek (aboemi), 10. V., coll. NOUALHIER (MNP); 1♀, Sukabumi (2,000 ft), Java occident., 1893, H. FRUHSTORFER, "Java. Fruhstorfer vend. 10. II. 1894" (ZMH); 1♂, same data (BM); 1♀, Palabuan (= Palaboehanratoe), S. W. Java, Coll. BREDDIN (IPK); 1♂, Mons Gede (4,000 ft), Java





Figs. 65–66. Venter of abdomen of *C. acuta*. 65, ♂; 66, ♀.

occident., VIII. 1892, H. FRUHSTORFER (ISNB); 1♂, G. Goentoer, Java, III. 1915, DRESCHER, coll. Dr. D. MACGILLAVRY, det. "*C. acuta* Sign." (RML); 1♂, Lechner (Preanger), Djasinga, Java, Museum Leiden, verz. J. J. de Vos tot Nederveen Cappel (RML); 1♂, same locality, V. (Mey), M. NEDERBURGH (RML); 3♂♂, Preanger (700 m), W. Java, 1929, W. C. v. HEURN (RML); 1♂, Tjimahi, W. Java, 1935, Museum Leiden Verz. H. v. d. VAART (RML); 9♂♂ 9♀♀, Buitenzorg, Java (ISNB); 2♂♂ 7♀♀, Garoet, W. Java, 1928?, W. C. v. HEURN (RML); 2♂♂ 2♀♀, Garoet (700 m), 1928, W. C. v. HEURN, Museum Leiden (RML); 13♂♂ 9♀♀, Garoet Omgv., 1928, W. C. v. HEURN, Museum Leiden (RML); 1♀, Bandoeng, 1946, N. GOSSELAAT (RML); 1♂, near Bandung, Java, 19. V. 1985, IGARASHI (MH); 1♀, Tasikmalaja, Saloppa res., Java, IX. 1949, W. J. MAANE (RML). —— Other localities: 1♀, Sumatra, Museum Leiden verz. J. J. de Vos tot Nederveen Cappel (RML); 2♂♂, Deli, Atjeh Widjoenoe, NEEB (RML); 1♀, Sumatra (ZMH); 1♂, Kamerun(!) (IPK). —— Without locality: 1♀ (IPK); 3♂♂ 1♀, Coll. HEYRAERTS (RML); 1♂, 60. 15 E. I. C. (BM).

This species is variable in the size of markings and spots on dorsum. Head and pronotum black with a transverse fascia on supra-antennal plate, a linear spot on top of frontoclypeus, labrum, a small triangular spot on base of frontoclypeus, anterior margin of vertex at middle, along transfrontal suture, and pronotal inner area without the diagonal grooves, ochreous or brown and with pronotal outer area posteriorly greenish ochreous

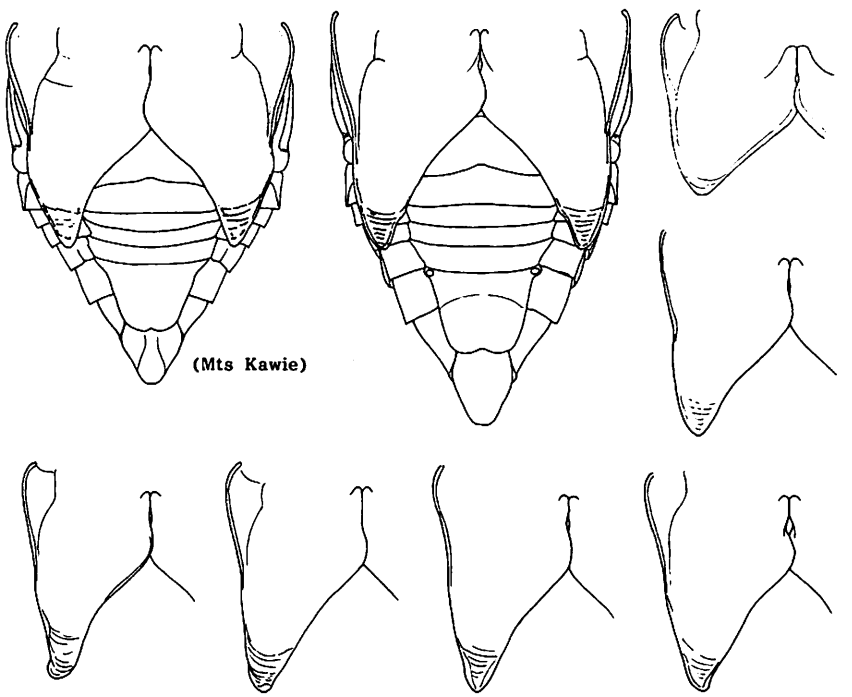


Fig. 67. Variation of ♂ operculum(-a) in *C. acuta*.

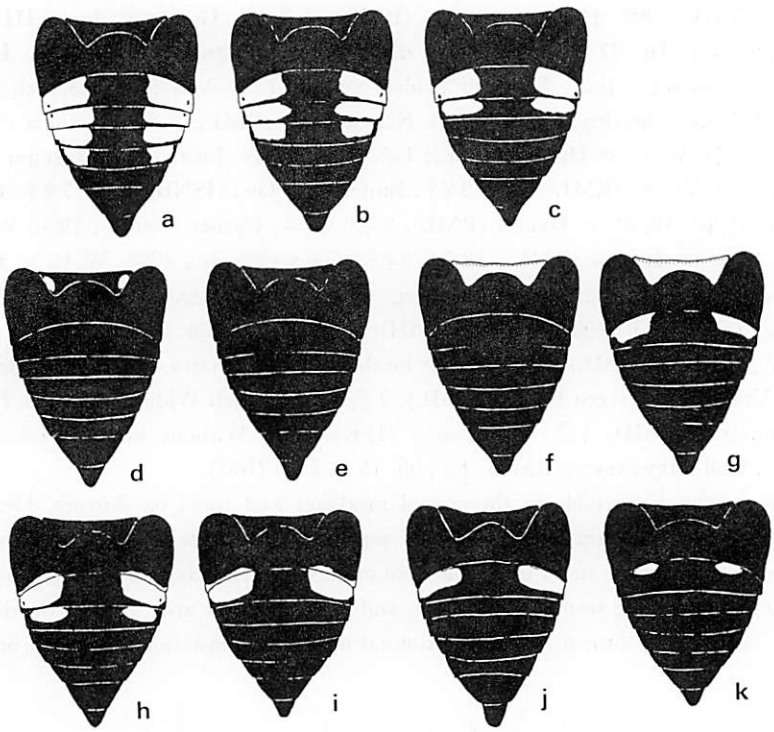


Fig. 68. Schematic figures of appearance of white pollinosity on ♂ abdominal terga in the *acuta* group occurring in the Lesser Sundas. a–c, *C. acuta*; d, *lombokensis*; e, *izzardi*; f–g, *ochromelas* sp. nov.; h–i, *timorica*; j, *alorensis* sp. nov.; k, *wetarensis* sp. nov.

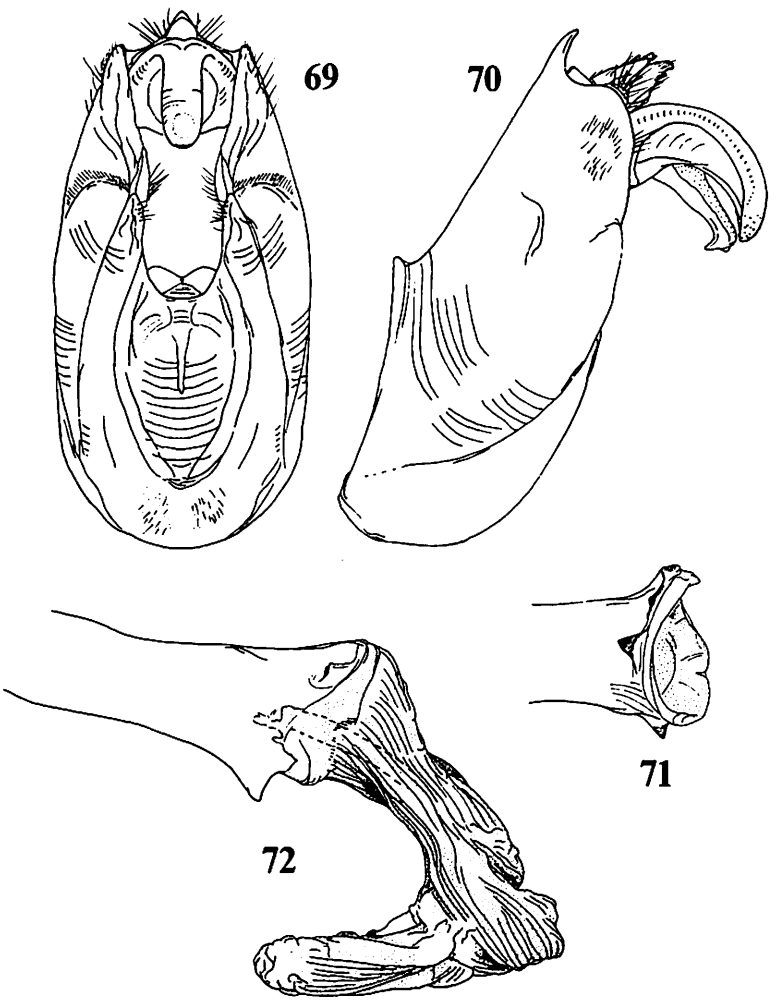
(the extreme outer margin often black); mesonotum dark castaneous with 4 anterior obconical spots, a central pair of which is larger and situated inside parapsidal sutures, lateral diagonal stripe, an area near posterior margin, a central lanceolate spot just before cruciform elevation and a narrow fascia across basal arm of the elevation black; areas near anterolateral angle, posterlateral corners and posterior margin of mesonotum covered with dense golden pilosity; abdomen grossy black with minute dark golden hairs; lateral parts of 3rd to 5th (sometimes to 6th) terga clothed with thick white pollinosity.

Venter of body covered with golden hairs; thorax black with mesepimeron, meso- and metatrochantins and meracanthus ochreous and with operculum (metepimeron) orange; legs black with outer lateral surfaces of fore coxa and fore femur, a spot on each base of mid and hind coxae, basal 1/2 of mid tibia, 3rd tarsal segment of mid and hind legs, a stripe on underside of hind femur and hind tarsus except for the apex, ochreous tinged with orange; abdomen orange with 2nd sternum, excepting apical margin laterally, central spots on 3rd to 6th sterna, forming a central longitudinal stripe, a central oblong spot on ♂ 7th sternum, extending to the apical margin, a central longitudinal fascia on ♂ 8th sternum (subgenital plate), central and diagonal fasciae on the apical margin and a pair of

small spots (sometimes absent) on ♀ 7th sternum, inner margin and apex of ♀ 9th segment and valvula 3 apically, black or infuscated brown.

Wings hyaline; forewing tinged with pale green basally and infuscated apically; veins green in basal 1/2 and fuscous or ochreous in the rest; basal cell of forewing hyaline and pale green, partly infuscated or black; areas on cross veins R_3–R_{4+5} and R_{4+5}–M_1 and along apices of longitudinal veins and ambient vein infuscated; basal 1/4–1/3 of cell 1A in forewing and basal 1/3 in hindwing, area along veins 2A and 3A of hindwing, and basal membrane opaquely black.

Head about as wide as pronotum and distinctly wider than base of mesonotum;



Figs. 69–72. Male genitalia of *C. acuta*. 69, 70: Pygofer in ventral (69) and lateral (70) views. —— 71,72: Apex of theca in ventral (71) and obliquely ventral (72) views (72, with vesica everted).

frontoclypeus rather depressed anteriad, with 7–9 transverse striations on the ventroapical surface; labium extending to middle of central metaprepisternal process; basal ocelli much more apart from each other than from the anterior one; mesonotum slightly shorter than pronotum in median length; abdomen somewhat longer than head and thorax in dorsal median length in ♂♂, while shorter in ♀♀: basal margin of ♂ 2nd tergum roundly expanded at middle; 2nd tergum slightly longer than the 3rd in ♀♀; ♂ operculum long, reaching 5th or 6th abdominal pleuron, triangular with the inner margin concavely sinuate apicad, and both opercula overlapping at the inner bases and the apices acute and often directing inwards; ♀ operculum small and angulate with the apical margin slightly sinuate; apical margin of ♂ 7th sternum very slightly emarginate at middle, and that of the ♀ sternum triangularly incised at middle; ♀ 9th segment relatively long, ca 1.27× as long as wide; valvulae extending slightly beyond 9th segment; costal membrane (precostal area) of forewing developed at base, about as wide as vein C; stalk of veins 1M and 2M (vein M) in forewing very short; vein CuP of forewing well separated from vein 1A in basal 3/4.

Male genitalia (Figs. 69–72). Pygofer oval and oblong, ca 1.95× as long as wide; a pair of ventral lobes of pygofer small, somewhat approaching to each other towards apices; uncus lobe narrow, evenly curved in lateral view, with base obtusely hooked; theca with 2 acute and 1 obtuse spines at the tip; vesica more or less narrowed near middle, with a long saccate process at apex, everted vertical from and as long as vesical shaft.

This species varies in the markings, coloration, development of white pollinosity (Fig. 68), and so on. The specimens from the Kawie Mts. (E Java) show some differences from those occurring in other localities of Java:–

ochreous or castaneous parts on thoracic nota much developed and paler; abdomen short and wide; ♂ 2nd tergum furnished with a central castaneous spot; ventral part of body also paler, rather reddish testaceous in colour; ♂ operculum wider at base, with

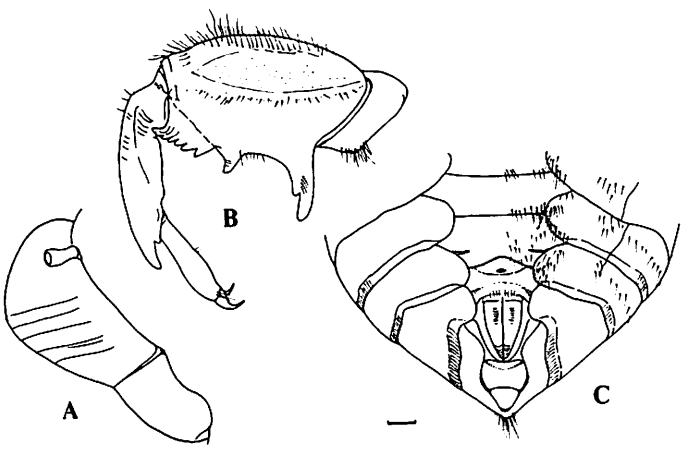


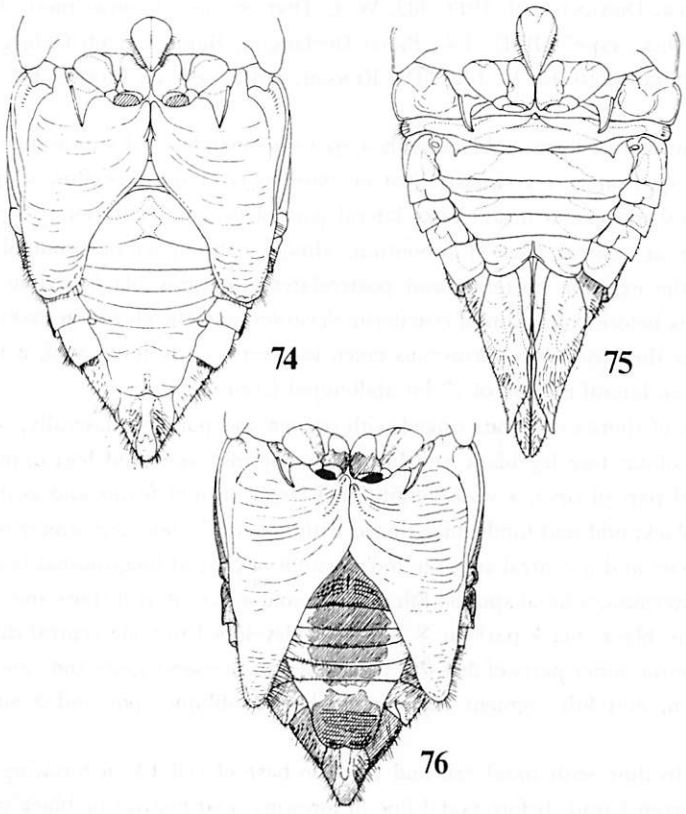
Fig. 73. Exuviae of *C. acuta* (♀). A, Frontoclypeus and clypeus in lateral view; B, fore leg; C, apical part of abdomen in ventral view. Scale, 1 mm.

apex inwardly curved; abdomen almost entirely reddish testaceous; infuscation on forewing much paler; uncus lobe of ♂ genitalia not so flattened towards apex; etc. Although a few specimens from the Kawie Mts. have been available for this study, they can probably be considered to show an infraspecific variation that appears in a montane population within *acuta* (SIGNORET).

In the Bali individuals, there is no variation in the appearance of white pollinosity on the abdominal terga; on lateral parts of 3rd and 4th terga in ♂♂. This form is also known in a part of the Javanese population.

Body length: 35–47 mm (mean 42.3 mm). ——Total length: 57–69 mm (mean 63.7 mm). ——Expanse of forewings: 106–134 mm (mean 123.2 mm).

Exuviae (Fig. 73). ♀. Body ochreous and lustrous with anal margin of wing-pad, dentation and spike of fore femur, and apical part of fore tibia, fuscous brown to black; frontoclypeus smooth-surfaced, roundly swollen, furnished with 10 distinct transverse rows of hairs; antenna composed of 8 segments, about 10 : 8.5 : 8 : 7.5 : 8 : 7 : 4 : 4 in the ratio of each length; fore femur oval, with anterior comb 6-toothed and with an intermediate



Figs. 74–76. Venter of abdomen. 74–75, *C. lombokensis*; 76, *izzardi*.

spike about 1/2 as apart from the comb as the posterior spike; caudal margin of 7th abdominal sternum triangulary emarginate at the middle; rudiment of valvulae rather wide, ca 1.56× as long as wide, with the tip acute; 10th segment wider than long, and the 11th also slightly wider than long. Body length: 35.4 mm, head width: 12.1 mm. Exuviae examined: 1♀, Tretes, Mt. Welirang, E. Java, 24. III. 1973, Y. UÉMURA leg. (MH).

Distribution. Java and Bali.

This species seems to be restricted to Java and Bali, Indonesia; other localities previously recorded must be caused by mislabelling or erroneous identification with *acuta*.

Cryptotympana lombokensis DISTANT, 1912
(Figs. 44, 68, 74–75, 77–79)

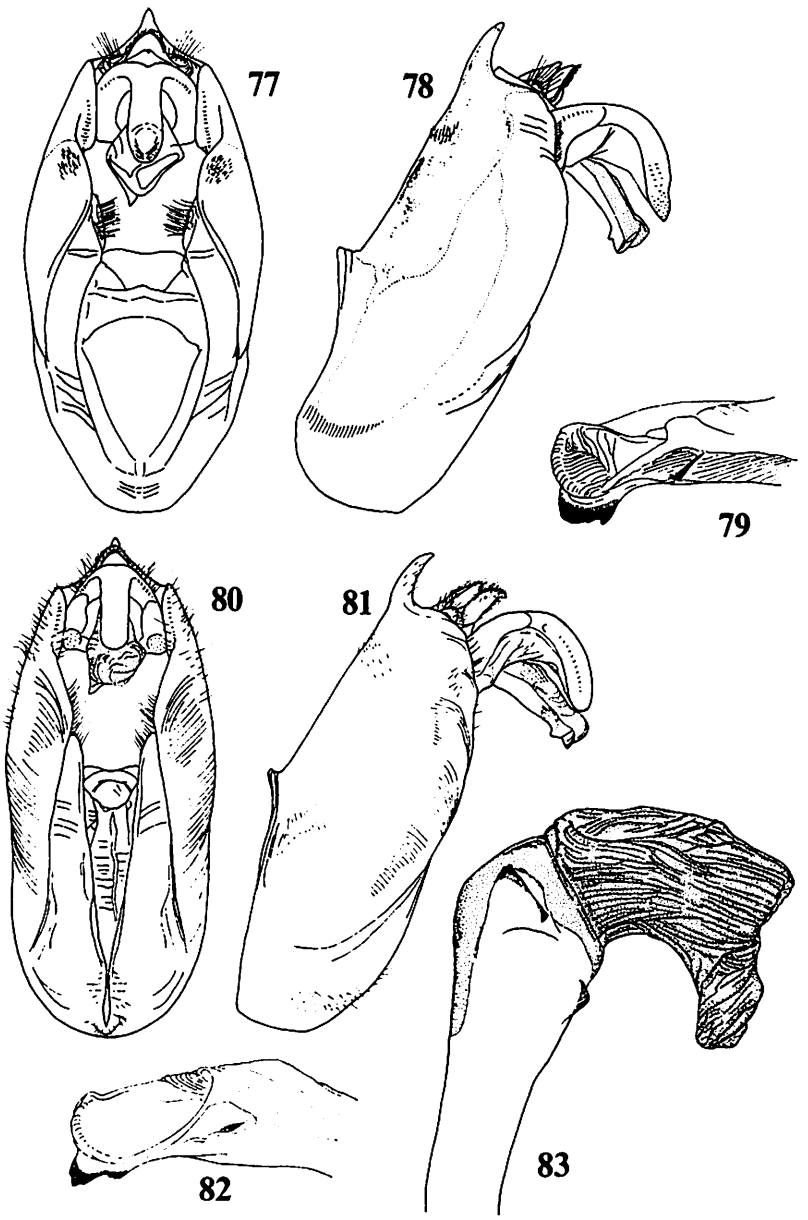
Cryptotympana lombokensis DISTANT, 1912, *Gen. ins.*, **142**: 35.

Specimens examined: 1♂ (holotype), Sapit 2000', Lombok, IV. 1896, H. FRUHSTORFER, DISTANT-Coll. 1911–383, W. L. DISTANT det. (handwriting) "*Cryptotympana lombokensis* Dist., type" (BM); 1♀, Batoe Doelangim, Batoe Lanteh Gebiege (800–1200 m), W. Sumbawa, 10–15. V. 1927, Dr. RENSCH, 904 2, coll. A. JACOBI, det. "*lombokensis*" (SMTD).

Dorsum of body grossy black with a spot on inner base of supra-antennal plate, a very small spot on vertex situated just on outer part of basal ocellus, a spot on inner posterolateral margin of head, inner lateral part of pronotal anterior margin, a minute foliate spot at central part of pronotum, almost entire part of pronotal outer area, excepting the extreme posterior and posterolateral margins black, a pair of posterior oblong spots before basal arm of cruciform elevation, and the elevation except for a black band across the basal arm, olivaceous-green to green, partly infuscated; a narrow white pollinosity on lateral margin of ♂ 1st abdominal tergum.

Venter of thorax ochreous tinged with orange and pollinose laterally; ♂ operculum orange in colour; fore leg black and fuscous, while mid and hind legs orange ochreous, with central part of coxa, a wide longitudinal fascia on mid femur and both the ends of mid tibia black; mid and hind tibiae tinged with green; ♂ abdomen orange ochreous with the basal part and a central spot on 2nd sternum, a central longitudinal fascia on apical 1/3 of 7th sternum, a basal spot on 8th pleuron, and a pair of oval spots and apical part of 8th sternum, black; black part on ♀ abdomen developed to wide central discal spots on 2nd–6th sterna, inner parts of 3rd–7th pleura, a pair of round spots and caudal margin of 7th sternum, and 9th segment excepting a lateral oblique spot and a subapical spot ochreous.

Wing hyaline with basal cell and extreme base of cell 1A in forewing green; veins generally green basad, before nodal line in forewing, and fuscous or black towards apex; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 of forewing dimly infuscated; basal



Figs. 77–83. Male genitalia of *C. lombokensis* (77–79) and *C. izzardi* (80–83). 77, 78, 80, 81: Pygofer in ventral (77, 80) and lateral (78, 81) views. —— 79, 82: Tip of theca in right side view. —— 83: Apex of theca with vesica everted in obliquely ventral view.

membrane black.

Head slightly narrower than pronotum; lateral margin of pronotum somewhat sinuate; abdomen conical, longer than head and thorax in dorsal median length, with basal margin of ♂ 2nd tergum expanded trapezoidally at middle; frontoclypeus evenly and roundly swollen; labium extending to slightly before a central metaprepisternal process; ♂ opercula rather short and contiguous at the inner bases, with apices reaching apical margin of 5th abdominal pleuron, widely rounded and with the inner margin widely emarginate; apical margin of ♀ operculum nearly straight; caudal margin of ♀ 7th sternum widely and triangularly incised at the middle; ♀ 9th tergum very long, ca 1.51× as long as wide in ventral view; valvulae extending caudally, beyond 9th segment.

Male genitalia (Figs. 77–79). Pygofer oval, ca 1.90× as long as wide in ventral view, with comparatively long and acute caudal beak and short ventral lobes, and with ventral margin somewhat expanded behind middle; uncus lobe long with subapex not curved inwards and centrally emarginate; theca furnished with 2 apical projections on the underside and right side, and the former projection widely spatulate and indented.

Body length : 39 mm. ——Total length (♀): ca 62 mm. ——Expanse of forewings (♂): ca 115 mm.

Distribution. Lombok and Sumbawa.

DISTANT (1912) recorded Flores as the distribution of the species, since he described *lombokensis* on the basis of 2♂♂ from Lombok and Flores. In the present study, the cicadas from Flores are recognized as an independent species.

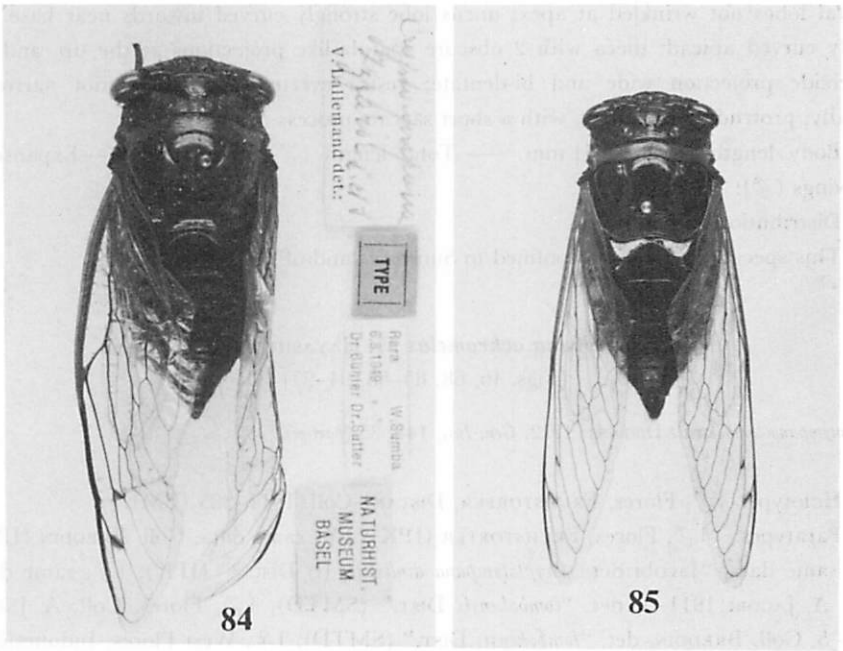
Cryptotympana izzardi LALLEMAND et SYNAVE, 1953
(Figs. 45, 68, 76, 80–84)

Cryptotympana izzardi LALLEMAND et SYNAVE, 1953, *Verh. naturf. Ges. Basel*, **64**: 230.

Specimens examined. 1♂ (holotype), Rara, W. Sumba, 6. VIII. 1949, Dr. BÜHLER & Dr. SUTTER, "V. Lallemand det.: *Cryptotympana Izzardi* L. et S." (NMB); 1♂ (paratype), Mau Marru, O. Sumba, 22. VII. 1949, Dr. BÜHLER & Dr. SUTTER, det. "*Cryptotympana izzardi* Lallemand et Synave, 1952" (RML).

Markings and spots on head and thorax very similar to those of *acuta*, but differing in their coloration greenish olivaceous and in the increase of olivaceous markings: — a wide transverse fascia on anterior margin of head, including anterior margins of frontoclypeus and supra-antennal plate, a central longitudinal stripe on pronotum and pronotal outer area (collar) widened; abdomen clothed with minute golden pilosity and without white pollinosity.

Venter of thorax silvery pilose, ochreous tinged with green, with base of mesepimeron, inner part of metaprepisternum, excluding central process, and metameron including base of meracanthus black; legs greenish ochreous with fore tibia, mid and hind (partly) trochanters, apex of mid tibia, and every tarsus black; apex of mesepimeron and



Figs. 84–85. 84, *Cryptotympana izzardi* (holotype ♂, NMB; more enlarged); 85, *C. ochromelas* sp. nov., ♂ (paratype).

♂ operculum orange in tinge; abdomen black with each lateral part of 3rd to 7th sterna reddish ochreous (apical part of 7th sternum entirely black in the holotype, while reddish ochreous in the paratype); 8th sternum more or less fuscous.

Wings hyaline with basal cell and basal 1/4 of cell 1A in forewing translucent and greenish, and the extreme base of hindwing infuscated; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 infuscated.

Head comparatively wide, slightly wider than pronotum, somewhat triangularly swollen anteriad; frontoclypeus not swollen, with 9–10 transverse striations on the surface; labium extending to middle of central metaprepisternal process; pronotum with lateral margin oblique, slightly sinuate, and posterolateral corner dilated; mesonotum, excluding cruciform elevation, slightly longer than pronotum in median length; abdomen longer than head and thorax in dorsal median length; ♂ operculum very long and slender, extending to middle of 7th pleuron, with the inner margin very slightly emarginate and with the tip subacute, and both opercula overlapping each other at the inner bases; caudal margin of 7th sternum evenly curved; stalk of veins 1M and 2M in forewing distinctly shorter than vein 1M before nodal line; vein Cup of forewing separated from vein 1A in basal 3/5.

Male genitalia (Figs. 80–83). Pygofer slender and oblong, closely similar to that of *acuta* in shape, ca 2.17× as long as wide, with caudal beak arched in lateral view and with

ventral lobes not wrinkled at apex; uncus lobe strongly curved inwards near base and gently curved apicad; theca with 2 obscure spatula-like projections at the tip, and the underside projection wide and bi-dentate; vesica everted very short, not narrowed apically, protruding obliquely, with a short saccate process at the apex.

Body length (♂): 40–41 mm. ——Total length (♂): ca 63 mm. ——Expanse of forewings (♂): 116 mm.

Distribution. Sumba.

This species seems to be confined to Sumba Island of the Lesser Sundas.

Cryptotypana ochromelas M. HAYASHI, sp. nov.
(Figs. 46, 68, 85–88, 94–97)

Cryptotympana lombokensis DISTANT, 1912, *Gen. Ins.*, **142**: 35 (*partim*).

Holotype: ♂, Flores, FRUHSTORFER, DISTANT-Coll. 1911–383 (BM).

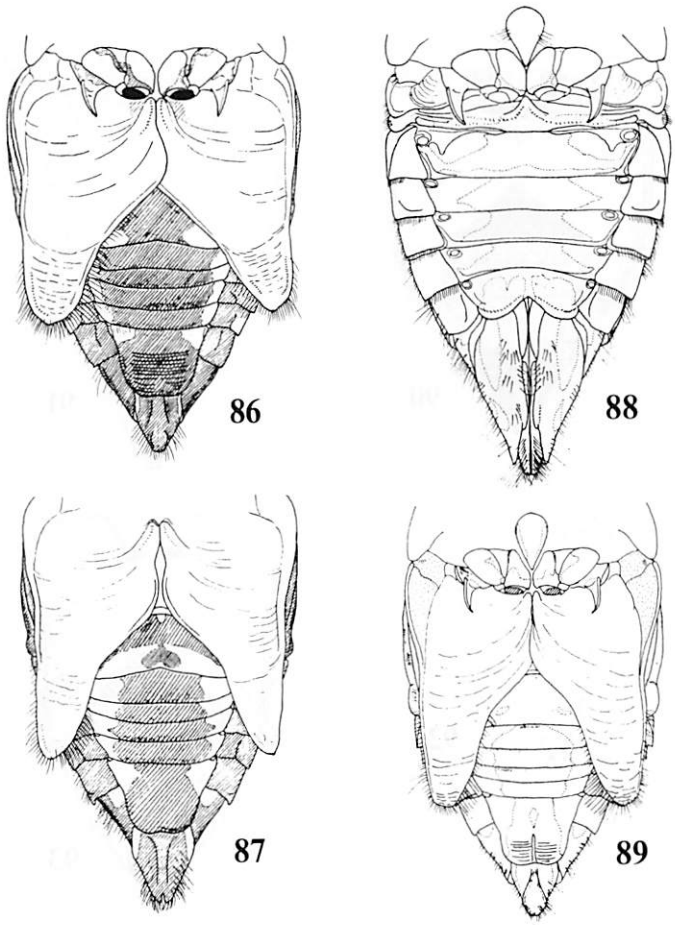
Paratypes: 1♂, Flores, FRUHSTORFER (IPK); 1♀, same data, Coll. BREDDIN (IPK); 1♀, same data, "Jacobi det.: *Cryptotympana dimissitia* (!) Dist. ?" (IPK); 1♂, same data, Coll. A. JACOBI 1911–5, det. "*lombokensis* DIST." (SMTD); 1♂, Flores, Coll, A. JACOBI 1911–5, Coll. BREDDIN, det. "*lombokensis* DIST." (SMTD); 1♀, West Flores, Indonesië, F. VERHEYEN (RML) 1♂, Adonara 2,000 ft, Solor Is. (BM).

Type depository: British Museum (Natural History), London.

Further specimens examined: 1♂, Bua Koreng (=Bua Kreang?), S. Celebes (HUS); 1♂, A Tjandi by Samarang, IV. 1915, G. BUITENDIJK, "P. C. M. de Greeve det., 1964: *Cryptotympana demissitia* Dist." (ZMA).

Head and thorax black with a transverse fascia on supra-antennal plate, continuing onto anterior margin of vertex, a stripe along transfrontal suture, a central longitudinal needle-like fascia on top of frontoclypeus, a central longitudinal carina of clypeus, labrum, inner margin of gena (near border with lorum), a central longitudinal fascia on pronotum and pronotal outer area (lateral and posterior collar) clearly, pale ochreous without greenish tinge, and with areas along pronotal diagonal grooves, a pair of posterior angulate spots on mesonotum, continuing to basal arm of cruciform elevation, a lateral linear fascia on mesonotum, a central small irregularly shaped spot on posterior surface of mesonotum, posterior notal process and cruciform elevation dark ochreous; ground colour of mesonotum paler, brown in ♀♀; abdomen grossy and black with timbal covering dark brown and with ♂ 1st tergum clothed with thick white pollinosity; lateral parts of ♂ 3rd tergum sometimes clothed with white pollinosity.

Venter of thorax, excepting ventral fold of pronotal paranotum, covered with white pollinosity; thorax pale ochreous with mesoprepisternum, inner part of mesepimeron and outer part of metaprepisternal process black; ♂ operculum orange with lateral base linearly covered with white pollinosity; abdomen black or fuscous with apical 1/2 of 2nd sternum except for the central part, lateral parts of 3rd–6th sterna, lateral part of 7th

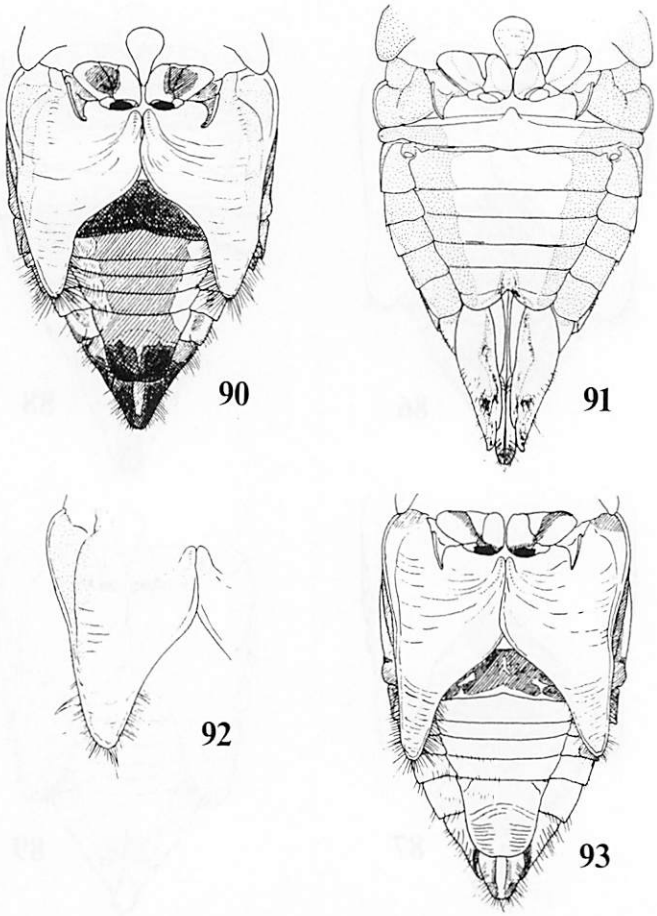


Figs. 86–89. Venter of abdomen. 86–88, *C. ochromelas* sp. nov. (86, holotype); 89, *alorensis* sp. nov. (holotype).

sternum in both ♂♂ and ♀♀, an oblong spot on lateral base of ♀ 9th tergum, and valvifer 2, ochreous; lateral part of abdominal sterna also clothed with sparse white pollinosity, forming a pair of longitudinal narrow white fasciae on abdominal venter; legs ochreous with apical part of coxa, basal part of trochanter, underside of fore femur, fore tibia, apices of mid and hind femora, apex of mid tibia, fore and mid tarsi, and apical as well as basal ends of hind tarsus, black.

Wings hyaline with basal cell and the extreme base of cell 1A of forewing opaque and pale ochreous; veins pale ochreous in basal 1/2, while fuscous apically; an area along anal margin of vannus near vein 3A and basal membrane opaque and fuscous; areas along 1st and 2nd cross veins of forewing infuscated.

Head as wide as pronotum and wider than base of mesonotum; frontoclypeus not



Figs. 90–93. Venter of abdomen (92, ♂ right operculum only). 90–92, *C. timorica*; 93, *wetarensis* sp. nov. (holotype).

swollen anteriorly, but somewhat depressed at middle; labium extending to middle of central metaprepisternal process; mesonotum, about as long as pronotum in median length, comparatively globose posteriad, and the posterolateral corner more or less angulate; central part of cruciform elevation depressed and wide, nearly as wide as the space between parapsidal sutures at the base; abdomen slightly longer than head and thorax in dorsal median length in ♂♂, while as long as that in ♀♀; basal margin of ♂ 2nd tergum evenly expanded at middle; ♂ operculum long, variable in shape by individuals, with margin hairy and with subacute or rounded apex extending caudally to 6th abdominal segment, and both opercula with apical parts nearly parallel or slightly divergent and with the inner margins emarginate towards apex, slightly overlapping or contiguous to each other at the inner bases; apical margin of ♂ 7th sternum somewhat

truncate, while that in ♀♀ widely and triangularly incised at the middle; ♀ 9th tergum conical, ca 1.27× as long as wide; stalk of veins 1M and 2M not so short, as long as vein 1M before nodal line; vein CuP of forewing well separated from vein 1A in basal 7/10.

Male genitalia (Figs. 94–97). Similar to those of *acuta, lombokensis*, etc.; pygofer oval, not much narrowed caudally, ca 1.95× as long as wide, with ventral margin more convex behind middle and with ventral lobes rather long; uncus lobe stick-like in shape, evenly curved; theca furnished with 2 obtuse projections on the under and right sides, and the underside one dentate and the other obtuse but distinct; vesica everted short, wide even at the apex, and protruding oblique, possessing a short saccate process at the tip.

Body length: 36–42 mm. ——Total length: 57–64 mm. ——Expanse of forewings: ca 115 mm.

Distribution. Flores and Solor.

It is probable that this species is also confined to the above islands and, therefore, its records from Java (ZMA) and Celebes (HUS) may have been caused by mislabelling.

Cryptotympana timorica (WALKER, 1870), sp. rev.

(Figs. 47, 68, 90–92, 98–100)

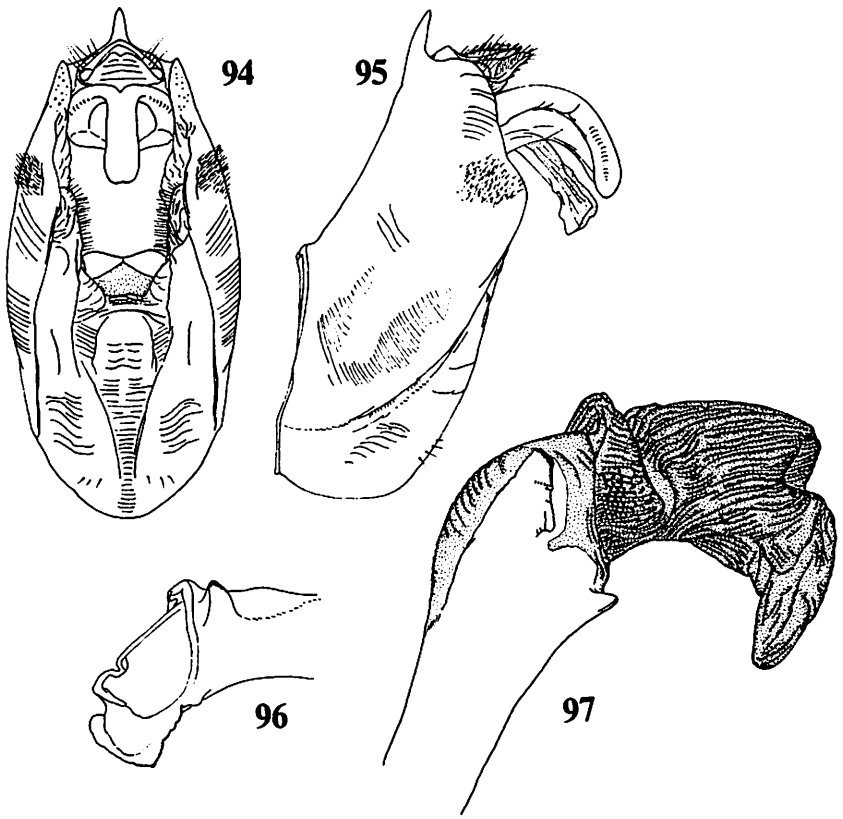
Fidicina timorica WALKER, 1870, *J. Proc. linn. Soc. Lond., Zool.*, **10**: 91.

Cryptotympana acuta: DISTANT, 1891, *Monogr. Orient. Cicad.*, p. 88 (*partim*); DISTANT, 1906, *Syn. Cat. Hom.*, **1**: 44 (*partim*); MOULTON, 1912, *J. Straits Br. R. Asiat. Soc.*, **57**: 129 (*partim*); MOULTON, 1923, *J. fed. Malay Stat. Mus.*, **11**: 138 (*partim*) (nec SIGNORET, 1849).

Cryptotympana heuertzi LALLEMAND et SYNAVE, 1953, *Verh. naturf. Ges. Basel*, **64**: 231. **(syn. nov.)**

Specimens examined. 1♂ (holotype), Timor, WALLACE, 67–66, WALKER det. (handwriting) "*timorica*" (BM); 1♂ (holotype of *heuertzi*), Amarassi, Timor, V. 1935, BÜHLER & MEYER, "V. Lallemand det.: *Cryptotympana heuertzi* L. et S." (NMB); 1♂ 1♀, Timor (BM); 1♀, same locality, DOHERTY, DISTANT-Coll. 1911–383 (BM); 1♀, S. W. Timor, Malay Archipelago, W. DOHERTY, 1903–31 (BM); 1♂, Midden Timor, Dr. TEN KATE (RML); 1♂, Wisneche, Timor, XII. (RML); 7♂♂, Timor, Iles de la Sonde (ISNB); 1♀, Timor 474, coll A. JACOBI, det. "*lombokensis* DIST." (SMTD); 1♂, Marobo (Bobongro), Timor, X. 1969/ VI. 1970, B. CLAMAGIRAUD rec. (MNP); 1♂, Thanh-moi, Tonkin(!) (ISNB).

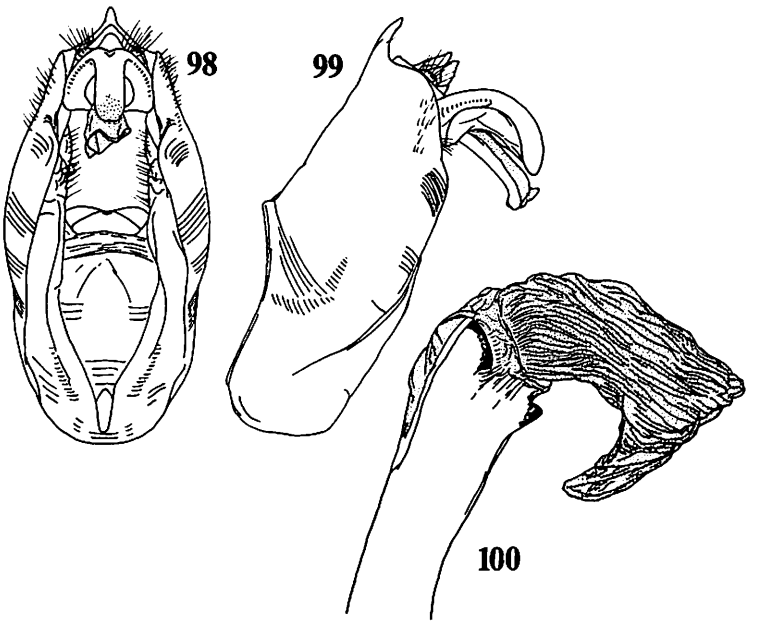
Head black with a transverse fascia along transfrontal suture, supra-antennal plate, anterior margin of vertex, outer posterolateral part of basal ocelli, a central spot at the tip of frontoclypeus, and rostrum except for the tip, castaneous; pronotum brown with a pair of central triangular spots, much widened anteriad, diagonal grooves and outer margin of the inner area, widened and undulating posteriorly by individuals, black, and with outer area ochreous somewhat tinged with orange, narrowly hemmed by black posteriorly and often interrupted by black into 3 parts; pronotal inner area almost entirely black by individuals; mesonotum dark brown with 4 anterior obconical spots, a central pair of



Figs. 94–97. Male genitalia of *C. ochromelas* sp. nov. 94, 95: Pygofer in ventral (94) and lateral (95) views. —— 96: Tip of theca in right side view. —— 97: Apex of theca with vesica everted in obliquely ventral view.

which is longer, and central narrow transverse fascia adjacent to base of cruciform elevation, black; abdomen black with central part of ♂ 1st tergum castaneous apically and with lateral part of ♀ 2nd tergum (sometimes) and a central longitudinal fascia on ♀ 9th tergum castaneous; lateral parts of 2nd (on apical margin), 3rd (on basal margin) and 4th (sometimes; on basal margin) clothed with thick white pollinosity, forming a pair of large white markings on abdomen laterally.

Venter of thorax ochreous with mesoprepisternum, lateral part of metaprepisternum, inner part of meracanthus and the extreme base of ♂ operculum black; ♂ operculum orange; apical part of mesepimeron and lateral parts of metaprepisternum and ♂ operculum (linearly) clothed with thick white pollinosity; legs castaneous with fore coxa, central parts of mid and hind coxae, tip of fore tarsus and claw black; abdomen castaneous with 2nd sternum, lateral margins of 3rd–5th pleura, caudal margins of 3rd–6th sterna (narrowly), apical 1/2 of 7th sternum, and central part of 8th sternum black;



Figs. 98–100. Male genitalia of *C. timorica*. 98, 99: Pygofer in ventral (98) and lateral (99) views. —— 100: Apex of theca with vesica everted in obliquely ventral view.

central part of each sternum often uniformly black, forming a wide longitudinal fascia; lateral part of abdomen clothed with dense golden minute pilosity and thick white pollinosity.

Wings hyaline, very slightly tinged with yellow at base; veins dark ochreous in basal 1/2 and fuscous or black apically; basal cell and basal 2/3 of cell 1A of forewing opaque and ochreous; precostal area paler, light ochreous; basal membrane dark grey; areas along 1st and 2nd cross veins distinctly infuscated.

Head narrower than pronotum; basal ocelli situated close to anterior margin of pronotum; frontoclypeus more or less swollen anteriad, with 9–11 transverse carinae; labium extending slightly beyond middle of central process of metaprepisternum; pronotum, with lateral margin oblique and hardly sinuate, gradually widened posteriad; mesonotum proper longer than pronotum in median length; abdomen about as long as head and thorax in dorsal median length; ♂ operculum, moderately variable in shape and very similar to that of *acuta*, inwardly curved at apex (by individuals), extending to or beyond the middle of 5th abdominal segment; apical margin of ♀ operculum oblique; caudal margin of 7th abdominal sternum evenly expanded or roundly truncate in ♂♂, while triangularly incised at the middle in ♀♀; ♀ 9th segment rather long, ca 1.36× as long as wide in ventral view; valvulae slightly beyond 9th segment; stalk of veins 1M and 2M as long as or slightly shorter than vein 1M before nodal line.

The coloration and markings of body are so variable as to yield many intermediate

forms, by individuals as well as by sexes.

Male genitalia (Figs. 98–100). Pygofer, similar to *lombokensis* and *ochromelas*, oval, widened near the middle, 1.90× as long as wide in ventral view, with ventral margin expanded behind the middle in lateral view, but not so much as in *ochromelas*; space between ventral lobes of pygofer wider; uncus lobe gently and evenly curved with apex not so lengthened; theca furnished with 2 apical projections on the under and right sides, and the underside one wide but not dentate; vesica comparatively wide, for an apical saccate process narrow and falcate.

Body length: 34–40 mm. ——Total length: 55–62 mm. ——Expanse of forewings: 110–122 mm.

Distribution. Timor.

This beautiful species seems to occur only on the island; other locality such as Tonkin may be caused by mislabelling in the present knowledge.

Cryptotympana alorensis M. HAYASHI, sp. nov.
(Figs. 48, 68, 89, 102–104)

Holotype: ♂, Alor, EVERETT, 98–7 (BM).

Type depository: British Museum (Natural History), London.

Very similar and closely allied to *timorica* from Timor and *ochromelas* from Flores and Solor, but differing as follows:

Head wider, about as wide as pronotum; a central longitudinal ochreous fascia on pronotum distinct, much widened anteriad and connected with anterior ochreous margin; pronotal outer area entirely ochreous without black part even on the inner margin; lateral margin of pronotum hardly sinuate; lateral surface of 3rd abdominal tergum clothed with white pollinosity, but not extending to apical margin of 2nd tergum; clypeus more clearly keeled; mesepimeron rather acute towards apex; central process of metaprepisternum ochreous with lateral parts black; operculum much more elongate, reaching basal margin

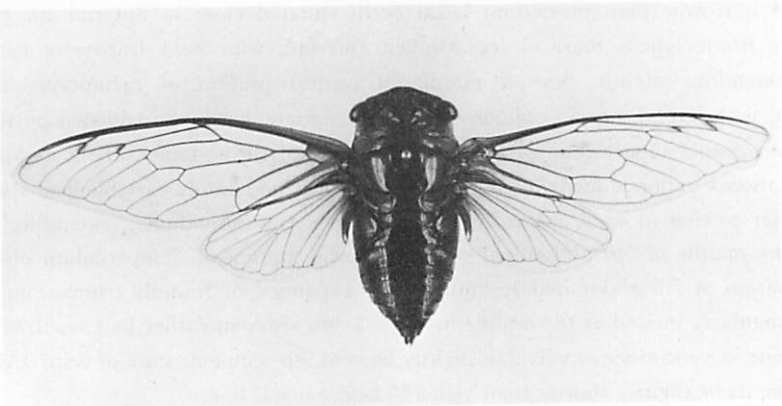
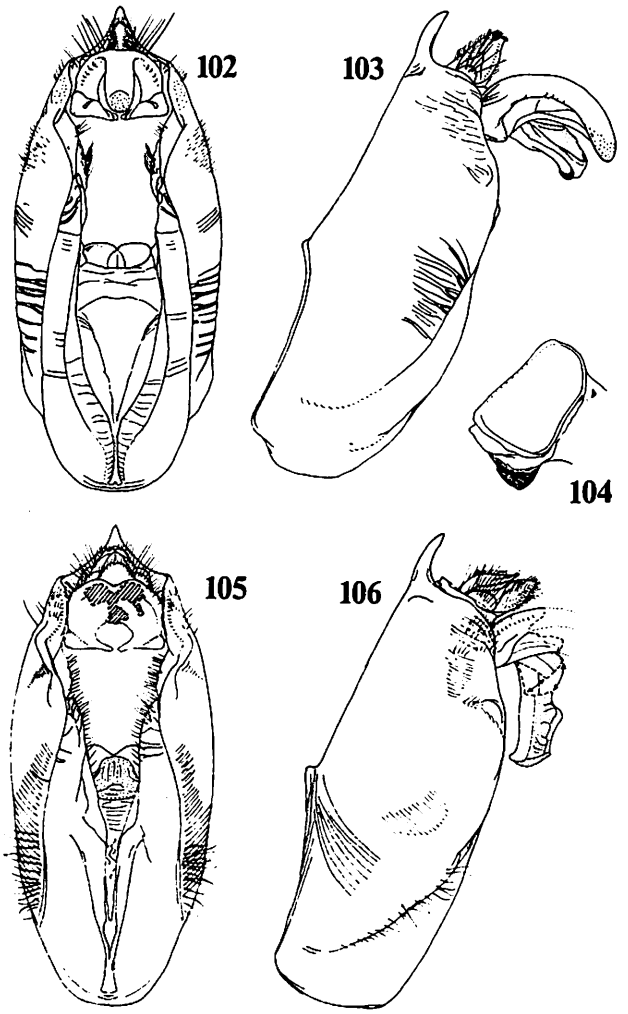


Fig. 101. *Cryptotympana wetarensis*, sp. nov. (holotype ♂; RML).



Figs. 102–106. Male genitalia of *C. alorensis* sp. nov. (102–104) and *C. wetarensis* sp. nov. (105–106). 102, 103, 105, 106: Pygofer in ventral (102, 105) and lateral (103, 106) views. —— 104: Thecal tip in apical view.

of 7th pleuron, with apex widely rounded and not curved inwards; central part of each abdominal sternum widely black, forming a wide central black stripe on abdomen; precostal area and costal veins (C and Sc+R) of forewing concolorous and stramineous; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 more distinct.

This species is very similar to *timorica* in the coloration and markings, and to *ochromelas* in the shape of head and ♂ operculum.

Male genitalia (Figs. 102–104). Pygofer elongate, ca 2.06× as long as wide in ventral view, parallel-sided before the middle and abruptly narrowed near the base, with caudal

beak acuminate and lateral surface strongly wrinkled towards the ventral margin; uncus lobe gently and evenly curved with hooked base; apex of theca with a wide scale-like and a minute projections on the under left and under right sides, respectively.

Body length (♂): 39 mm. ——Expanse of forewings (♂): 110 mm.

Distribution. Alor.

During the course of the present study, only 1♂ specimen was available. This species seems to be closely allied to *timorica* and *ochromelas*, being recognized as an intermediate type of the two forms. In spite of the similarity in the external characters, this species shows an apparent peculiarity in the ♂ genitalia. It is, therefore, doubtless that *alorensis* is specifically independent.

Cryptotympana wetarensis M. HAYASHI, sp. nov.
(Fig. 49, 68, 93, 101, 105–106)

Holotype: ♂, Wetter, SCHÄDLER, "P. C. M. de Greeve det., 1964: *Cryptotympana acuta* Sign." (RML).

Type depository: Rijksmuseum van Natuurlijke Historie, Leiden.

Similar to *timorica*; head and thorax castaneous and very smooth with a transverse fascia on vertex, widened laterally, not reaching eye and including ocelli-area; central part of frontoclypeus widely, a transverse fascia on gena, apical 1/3 of clypeus, lorum, tip of labium, a pair of central longitudinal narrow fasciae on pronotum, fused to each other posteriorly, posterior margin of pronotal inner area at the middle, posterolateral corner of pronotal collar narrowly, a pair of central obconical spots on mesonotum, a lanceolate spot at the centre of mesonotum, an obliquely longitudinal stripe on lateral surface of mesonotum, a spot just before cruciform elevation, incised at middle, posterior margin of mesonotum and a narrow band across basal arm of the elevation, black; abdomen grossy black and greyishly pilose with caudal margin of 1st tergum and timbal covering castaneous or fuscous; lateral part of 3rd tergum clothed with sparse white pollinosity.

Venter of body mostly ochreous or castaneous; thorax ochreous tinged with orange, with mesepisternum, base of mesokatepimeron, inner surface of fore femur, central spots on mid and hind coxae, a linear spot on mid femur, claw and the extreme base of operculum black or fuscous; abdomen dark castaneous with 2nd sternum except for the apical margin and apex of 8th pleuron black.

Wings hyaline; veins stramineous in basal 1/2, before nodal line in forewing, and fuscous or black at the rest, and vein Sc+R more or less infuscated; basal cell and basal 2/5 of cell 1A in forewing stramineous to ochreous; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 of forewing infuscated; basal part of hindwing with yellow tinge; basal membrane as well as axillary cord fuscous.

Head almost as wide as pronotum, with the anterior margin somewhat triangularly swollen; frontoclypeus ca 1.13× as long as wide, with 9 transverse striations on the surface; labium extending to middle of central process of metaprepisternum; mesonotum

proper longer than pronotum in median length; abdomen as long as head and thorax in dorsal median length; ♂ operculum similar to that of *timorica* in shape, reaching basal margin of 6th abdominal sternum, with the tip more acute and curved downwards; 7th abdominal sternum truncate caudally with slight central incision; costal membrane of forewing wide and arched basally; stalk of veins 1M and 2M shorter than vein 1M before nodal line in forewing; vein CuP of forewing separated from vein 1A in basal 3/5.

Male genitalia (Figs. 105–106). Very similar to those of *timorica*; pygofer, ca 2.13× as long as wide, widened apically with caudal beak acuminate and ventral margin sinuate outwards at subapex; space between the ventral lobes narrower; uncus lobe and theca broken.

Body length (♂): 38 mm. ——Expanse of forewings (♂): ca 115 mm.

Distribution. Wetar.

The *aquila* group

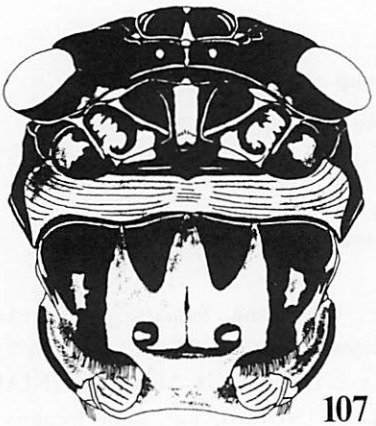
Cryptotympana aquila (WALKER, 1850)

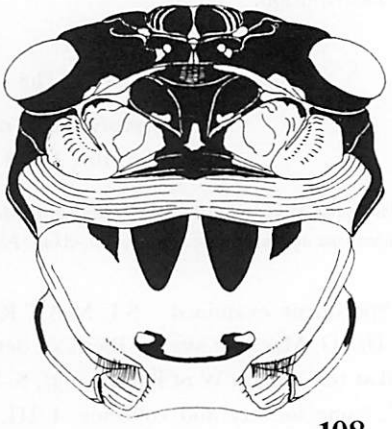
(Figs. 107, 110–111, 114–115, 117–121)

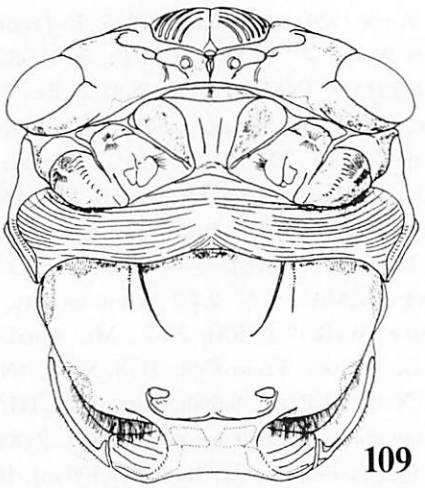
Fidicina aquila WALKER, 1850, *List Hom. Brit. Mus.*, **1**: 84.
Cryptotympana aquila: STÅL, *Öfv. K. Vet.-Akad. Förh.*, **19**: 483.

Specimens examined. SUMATRA: 1♂, Palembang, Sumatra, McGILLAVRY, coll. Dr. D. MACGILLAVTY, "Bierman det.: *Cryptotympana accipiter* Walk." (ZMA); 2♂♂, Benakat (ca 180 km W of Palembang), S. Sumatra, 2. III. 1983, H. MAKIHARA (NIAES); 3♂♂, same locality and collector, 4. III. 1983 (LT) (NIAES); 1♂, same locality and collector, 14. III. 1983 (NIAES); 2♂♂, same locality and collector, 15. III. 1983 (NIAES); 1♂, Fort de Kock (920 m), Sumatra, 1926, E. JACOBSON, "W. E. China det., 1928: *Cryptotympana aquila* Walk., ♂" (ZMA); 1♀, Ft. de Kock, Sumatra, W. ROBINSON bequest 1929, det. "*Cryptotympana*" (NMNH); 1♂, Padang, Be... ?, Sum. O, R. v. d. GOOT, "P. C. M. de Greeve det., 1964: *Cryptotympana aquila* Walk." (ZMA); 1♂, Taloek, Midden Sumatra, Exp. Kleiweg de ZWAAN (ZMA); 1♀, Medan, Sumatra, de BUSSY, coll. Dr. D. MACGILLAVRY, "M. Gill. det.: *Cryptotympana aquila* Walk." (ZMA); 1♂, Bireun, Sumatra, 11. V. 1929, Prince LÉOPOLD (ISNB); 1♂, Brastagi, Sumatra, 18. VII. 1985 (MH); 1♀, Sumatra Occident., van LANSBERG (ISNB). —— BORNEO: 1♂, Kinabalu, Borneo, coll. Dr. D. MACGILLAVRY (ZMA); 2♂♂ 2♀♀, same locality, collectio HAGLUND, "A. Jacobi determ.: *C. accipiter* (Walk.)" (NRS); 2♀♀, Mt. Kinabalu (5–6,000 ft), N. Bor (neo), A. D. DODGE & G. A. Goss, From Coll. U. S. N. M. (NMNH); 1♂ 1♀, Poling (900 m), Mt. Kinabalu (National Park), Sabah, Borneo, 29. III/2. IV. 1978, T. HARUTA (MH); 1♂, Tinanamantawaran (ca 1,000 m), near Poling, Ranau, Borneo, 13. IV. 1983 (at light), S. NAGAI leg. (MH); 1♀, Crocker Range (1,400 m), 16 miles NE of Keningau, Sabah, Borneo, E. Malaysia, 22. IV. 1981, S. NAGAI leg. (MH); 1♀, same locality and collector, 26. IV. 1981 (MH); 1♂, Kota Kinabalu, Sabah, E. Malaysia, 25. III. 1981, K.

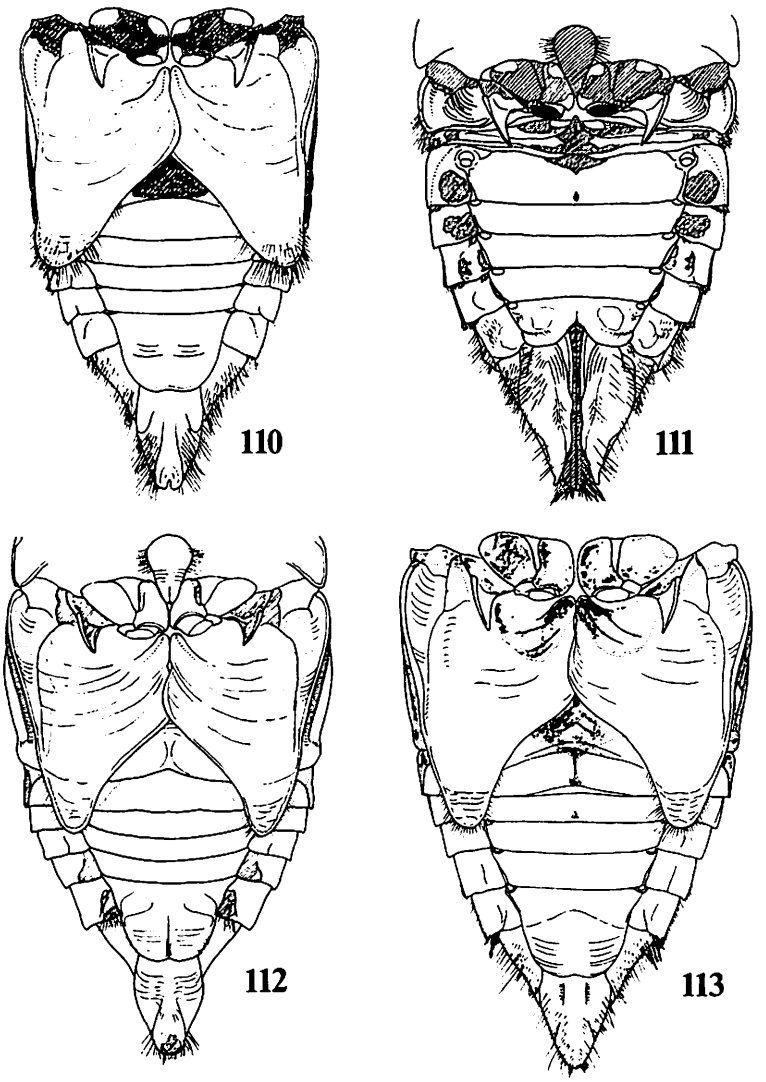
SUGIYAMA (MH); 1 ♂, Marudi, Sarawak, 15. III. 1969, L. C. WANG leg. (OMNH); 1 ♂, same data (MH); 1 ♂, same locality, 10. III. 1969, T. KUNOU et Y. ARITA leg. (MH); 1 ♂, Semongok, Sarawak, Malaysia, 30. V. 1971, N. OHO leg. (MH); 1 ♂, Banguey, collectio Haglund (NRS); 1 ♂, Sotek, near Balikpapan, Kalimantan, Indonesia, 8. II. 1975, Y. WADA (MH); 1 ♂, Samarinda, Kalimantan Timur, Indonesia, XII. 1975, Y. UÉMURA leg. (MH); 1 ♂, same locality and collector, 28. I. 1977 (MH); 1 ♂, same locality and collector, 17. II. 1977 (MH); 2 ♂♂, Keburao (lower part of Kayan Rv.), E. Kalimantan, Indonesia, 27. III. 1979, Y. UÉMURA leg. (MH); 2 ♂♂, same data, KMNHIR 100,228～229 (KMNH); 1 ♂, Kg. Liawan, Keningau Interior Residency, Sabah, Borneo, 27. II. 1977, N. KASHIWAI leg. (MH); 1 ♂, Borneo (MNP); 1 ♂, same locality (ISNB); 1 ♀, same







Figs. 107–109. Head and thoracic nota of the *aquila* group. 107, *C. aquila*; 108, *brunnea* sp. nov.; 109, *praeclara* sp. nov.



Figs. 110–113. Venter of abdomen. 110–111, *C. aquila*; 112, *brunnea* sp. nov.; 113, *praeclara* sp. nov.

locality, Coll. BREDDIN (IPK); 1♂, S.O. Borneo, Coll. BREDDIN, det. "*Cryptotympana aquila*" (IPK). —— West MALAYSIA: 1♂, Malaisie britannique, Soengai Konghoi, Negri Sembilan, 6–7. II. 1932, Prince LÉOPOLD (ISNB); 2♀♀, Pérak, Malaisie (ISNB); 1♀, Taiping, Perak, West Malaysia, V. 1975, K. C. LIEW (MH); 6♂♂, same locality and collector, II. 1976 (MH); 3♂♂, same data, KMNHIR 100,230~232 (KMNH), 14♂♂, same locality and collector, 28. II. 1976 (MH); 2♂♂, same locality and collector, III. 1978 (MH); 1♂, same locality and collector, 1979 (MH); 1♂, Kuala Pilah, Malaysia,

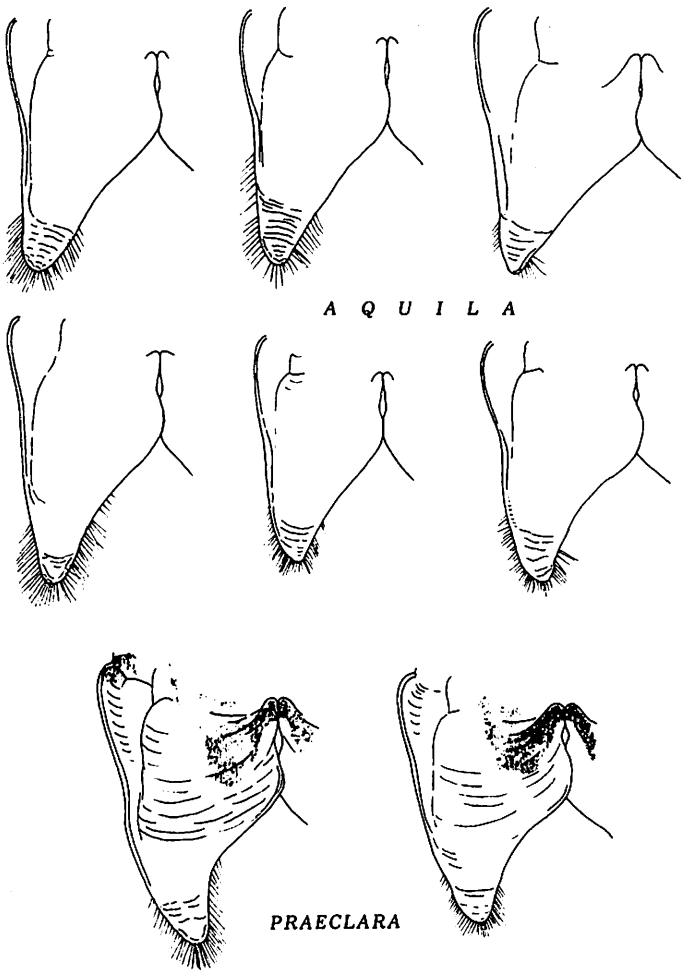
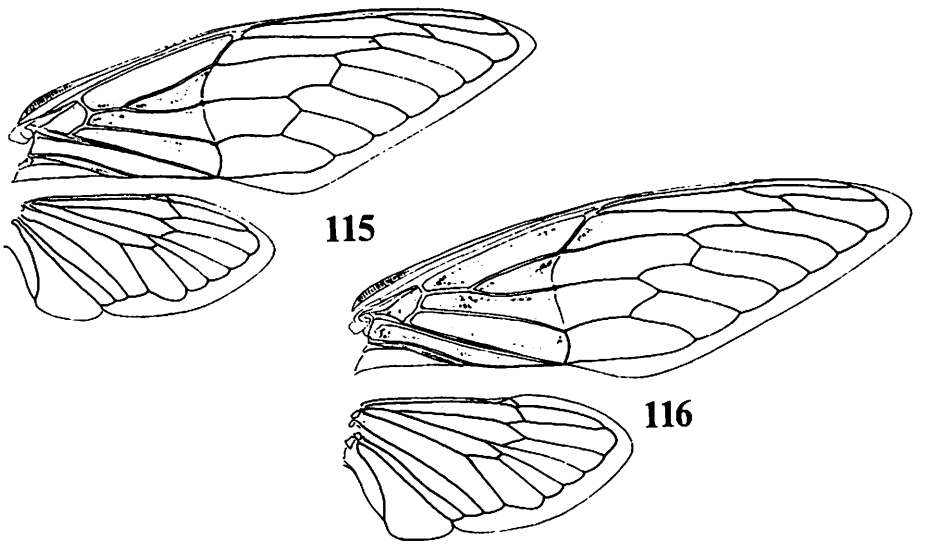


Fig. 114. Variation in ♂ right operculum of *C. aquila* (upper and middle rows) and *C. praeclara* sp. nov. (lower row).

1973 (MH); 1♂, Tanah Rata, near Cameron Highlands, West Malaysia, 23. II. 1970, W. SUZUKI leg. (MH); 1♂, same locality and collector, 27. II. 1970 (MH); 1♂, same locality and collector, 3. III. 1970 (MH); 12♂♂, same locality, 27. II. 1976 (at light), S. SAITÔ leg. (MH); 11♂♂, same locality, 29. II. 1976 (at light), S. SAITÔ & W. SUZUKI leg. (MH); 5♂♂, same locality, 1. III. 1976 (at light), W. SUZUKI leg. (MH); 1♂, same data, KMNHIR 100,233 (KMNH); 1♂, Cameron Highland, Malaysia (NIAES). —— THAILAND: 1♀, Khow Sai, Dow (1,000 ft), Trong, Lr Siam, I–II. 1899, W. L. ABBOTT, U. S. N. M. No..., "J. P. Duffels det., 1976: *Cryptotympana* spec." (NMNH); 1♂, Khao Chong, Thailand, 1. II. 1962, F. OGAWA leg. (EUM); 1♂, Chao Chong, Thailand, 1. II. 1962, YODA leg. (EUM); 1♂, Chiang Mai, Thailand, IV. 1985, N. KOYAMA leg.

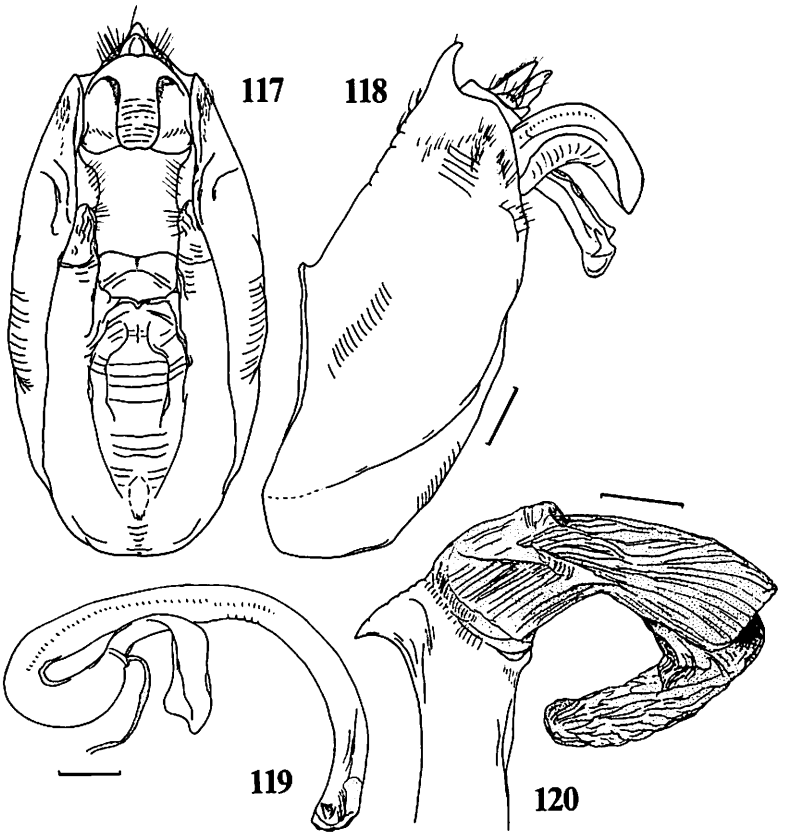


Figs. 115–116. Right wings. 115, *C. aquila*; 116, *praeclara* sp. nov.

(MH); 1♂, Doi Pui, Chiangmai, Thailand, 25. III. 1986 (MH). —— Other localities: 1♂, Brastagi, Burma(?), V. 1927, F. J. MEGGITT (NMNH); 1♂, Laos, MOUHOT, 68 4 (BM); 1♂, Tonpheng, Laos, 15. IV. 1966, native collector (BISH); 112♂♂, Thanh-moi, Tonkin (ISNB); 1♀, Archipelago Ind. ori.?, Coll. Dr. D. MACGILLAVRY, det. "*Cicada fasciata*", "M. Gill. det.: *Cryptotympana accipiter* Walk., ♀" (ZMA); 1♂, same locality, Coll. Dr. D. MACGILLAVRY, "M. Gill. det.: *Cryptotympana aquila* Walk.", "P. C. M. de Greeve det., 1964: *Cryptotympana karnyi* Moult." (ZMA); 1♂, Preanger, Sumedang, Java, P. VERMERSCH (ISNB); 1♂, Manilla, Insul. Filipp., M./S. "Tamara", 1935, W. LUNDIN (NRS).

Markings and coloration on head and thorax closely similar to those of *fumipennis* and *acuta*; a central longitudinal fascia on pronotum sometimes much or completely reduced; a central castaneous marking on mesonotum often possessing a central black stripe; abdomen black with the extreme lateral margin of each tergum (excluding ♂ 9th segment) reddish testaceous, forming a lateral marginal stripe on abdomen.

Venter of body clothed with minute golden hairs; thorax reddish ochreous with meso- and metaprepisterna (including central process), metameron, and the extreme base of operculum black; ♂ operculum orange tinged with red; abdomen orange with ♂ 2nd sternum except for posterior margin which is often interrupted by black at the middle, each central part of ♀ 2nd and 3rd (basal part) sterna, lateral margin of ♀ 2nd segment, central spots on 3rd, 4th and 5th (much smaller) pleura and valvulae, black; fore and mid legs black with outer surface of fore femur and mid coxa, a pair of linear spots on mid femur and proximal band of mid tibia orange ochreous; hind leg orange with most part of coxa except for the outer end, trochanter, a longitudinal linear spot on femur, widened



Figs. 117–120. Male genitalia of *C. aquila*. 117, 118: Pygofer in ventral (117) and lateral (118) views. —— 119: Theca. —— 120: Apical part of theca with vesica everted. Scales; 1 mm (117–119), 0.5 mm (120).

apicad, extreme base and apex of tibia, 1st, 2nd and 3rd (apically) tarsal segments, and claw, black.

Wings opaquely fuscous or black in basal 1/2 (inner part of nodal line in forewing), and hyaline at the rest; black part of forewing further extending apically along costal margin, i.e., cells 1st R_3 (paler at the central part), 1st R_5, R_2 and 2nd R_3 (paler); vannus (cell 2A) mostly or entirely black; veins reddish brown (sometimes tinged with green basally) in forewing, while mostly black and partly ochreous in apical parts of veins R_{4+5}, M_1, M_{2+3}, M_4, CuA_1 and CuA_2 of hindwing; extreme base of costal membrane black.

Head about as wide as pronotum; frontoclypeus wider, ca 1.01× as long as wide, with 7–8 transverse striations on the surface; labium extending near to but not beyond central process of metaprepistenum; mesonotum proper longer than pronotum in median length; abdomen slightly longer than head and thorax in dorsal median length in ♂♂, as long as that in ♀♀; ♂ operculum long and triangular with the apex rounded or subacute,

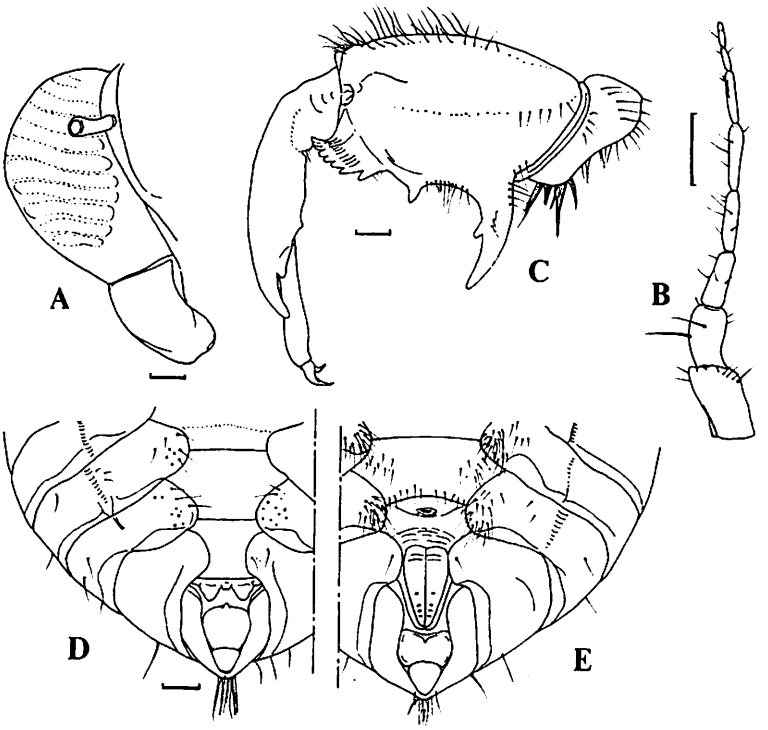


Fig. 121. Exuviae of *C. aquila*. A, Frontoclypeus and clypeus in lateral view; B, right antenna; C; left fore leg; D–E, apical part of abdomen in ventral view (D, ♂; E, ♀).

extending to 5th or 6th abdominal segment, and opercula slightly overlapping or rarely contiguous at the inner bases; ♂ 7th sternum wide with rounded caudal margin; caudal margin of ♀ 7th sternum truncate, triangularly incised at the middle; ♀ 9th tergum short and wide, ca 1.17× as long as wide; vein Sc+R of forewing narrower, about 1/2 the width of vein C.

The ♂ operculum is slightly variable in shape and size by individuals (Fig. 114): its apex is rounded or acute, curved inwards or outwards. This is, without doubt, within the infraspecific variations in *aquila*.

Male genitalia (Figs. 117–120). Pygofer oblong, widened before the middle, 1.87× as long as wide; a pair of ventral lobes of pygofer long and parallel; uncus lobe comparatively wide, strongly curved inwards, with rounded tip; theca gently curved at apical 1/3 with an acute projection at the apex; vesica everted with a wide saccate process, rather directing backwards.

Body length: ♂ 35–49 mm (mean 44.3 mm), ♀ 35–45 mm (mean 41.0 mm). ——Total length: 54–71 mm (mean 65.7 mm). ——Expanse of forewings: 115–142 mm (mean 127.2 mm).

Exuviae (Fig. 121). Body uniformly ochreous and well lustrous with apical part of fore tibia, fore femoral comb and spikes, and base of wing-pad, darkened; frontoclypeus globose with 11–14 transverse rows of hairs; antenna 8-segmented, about 10: 8: 7.5: 7.5: 8: 7: 3.5: 3.5 in the ratio of each segmental length; anterior comb of fore femur with 6–8 teeth, and the last tooth smaller; a femoral intermediate spike situated near the middle of under margin of femur, and the posterior spike long and arched; ♂ 9th abdominal sternum bigibbous; anterior margin of ♂ 10th segment narrowly tubercular at the middle; basal margin of ♀ 8th sternum evenly expanded; rudiment of ovipositor (valvula 2) slender, ca 1.8× as long as wide. Body length: 32.7–34.5 mm, head width: 11.7–12.6 mm. Exuviae examined: 1♂ 2♀♀, Keningau, Bunsit, Sabah, 26. VIII. 1980, T. ENDO leg. (MH); 2♂♂ 2♀♀, 19 miles point, Cameron Highland, Malaysia, 10. II. 1978, Y. MIYATAKE (OMNH).

Distribution. Sumatra, Borneo (w/ Banggi), Malay Peninsula, Thailand, Burma, Laos and Vietnam.

Other localities recorded, viz. Korea, Philippines, Hong Kong, etc., seem to be erroneous or caused by mislabelling.

This species is said to be very abundant in March and April in Malaysia, and only ♂♂ are frequently attracted to light.

Cryptotympana brunnea M. HAYASHI, sp. nov.
(Figs. 108, 112, 122–126)

Holotype: ♂, Lasikin, Simalur, Sumatra, IV. 1913, E. JACOBSON, "det.: *Cryptotympana*

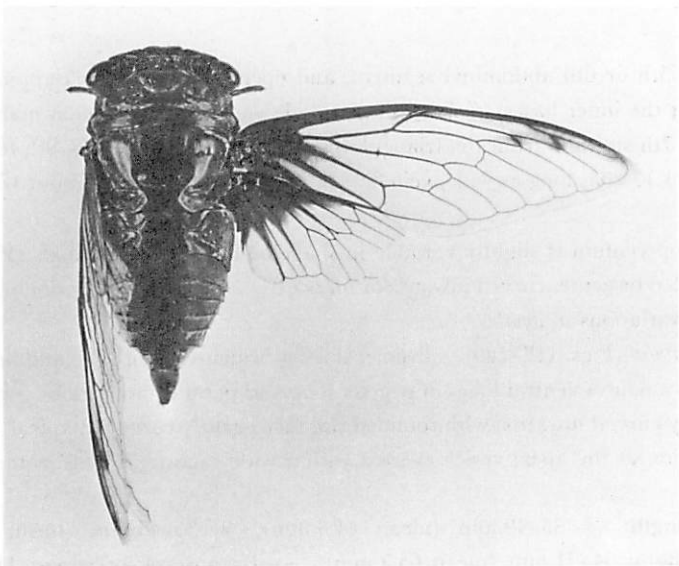
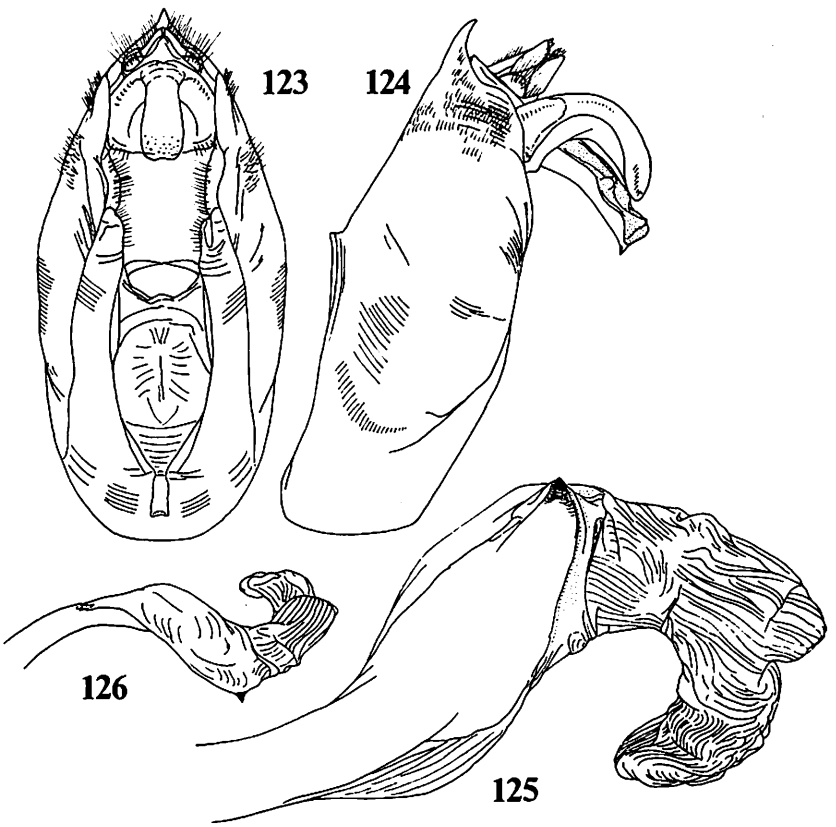


Fig. 122. *Cryptotympana brunnea*, sp. nov. (holotype ♂, RML).



Figs. 123–126. Male genitalia of *C. brunnea* sp. nov. 123, 124: Pygofer in ventral (123) and lateral (124) views. —— 125, 126: Apical part of theca with vesica everted in obliquely ventral (125) and obliquely dorsal (126) views.

sp. *acuta* Signoret ?", "P. C. M. de Greeve det., 1964: *Cryptotympana leopoldi* Lallemand" (RML).

Paratypes: 1 ♂, Sinabang, Simalur, Sum., IV. 1913 (24–31), E. Jacobson, "P. C. M. de Greeve det., 1964: *Cryptotympana leopoldi* Lallemand" (RML); 1 ♂, Sua Samatan, Sim. Sum., IV. 1913, E. Jacobson (RML).

Type depository: Rijksmuseum van Natuurlijke Historie, Leiden.

Totally brownish without distinct markings; head black or dark castaneous with inner part of supra-antennal plate, anterior tip of frontoclypeus at the middle and labrum paler and ochreous; thorax castaneous with a central longitudinal fascia on pronotum, much widened both anteriad and posteriad, extreme margin of pronotal outer area, a pair of central obconical spots on mesonotum inside parapsidal suture, lateral area of mesonotum and a narrow area adjacent to cruciform elevation, dimly black or infuscated; abdomen dark castaneous with lateral parts paler.

Venter of body covered with minute greyish hairs; thorax uniformly pale brown, more

or less darkened; legs brown with inner surface of fore coxa, central part of mid and hind coxae, each trochanter, underside of mid femur, fore and mid tibiae, fore and mid tarsi and claw, more or less infuscated; ♂ operculum ochreous with orange tinge; abdomen pale brown or castaneous with central part of each sternum faintly darkened.

Wings hyaline with basal cell and the extreme base of cell 1A of forewing and basal 1/3 of hindwing black or much infuscated; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 of forewing fuscous; basal black part of forewing sometimes extending slightly beyond basal cell; vannus (cell 2A) of hindwing almost entirely hyaline with the area adjacent to veins 2A and 3A fuscous.

Head as wide as pronotum; frontoclypeus, not so swollen anteriorly, 0.96–1.03× as long as wide, with 7–9 transverse carinae on the surface; labium extending to anterior angle of central metaprepisternal process; lateral margin of pronotum slightly oblique and divergent, but not particularly sinuate; mesonotum proper about as long as pronotum in median length; cruciform elevation shorter and wider than in *aquila*, and similar to that of *praeclara* (*vide infra*); abdomen conical, as long as or shorter than head and thorax in dorsal median length; ♂ operculum, similar in shape to that of *acuta*, reaching 5th abdominal segment, and the inner margin overlapping or contiguous basally; caudal margin of 7th abdominal sternum rounded, slightly emarginate at the middle; forewing slender, with acute apex and with apical margin recti-linear; vein M (stalk of 1M and 2M) very short; vein CuP of forewing separated from vein 1A in basal 3/5.

Male genitalia (Figs. 123–126). Pygofer very similar in shape to that of *aquila*, widened near the middle, ca 1.88× as long as wide; caudolateral margin of pygofer not so sinuate as in *aquila*; shape and curvature of uncus lobe similar to those in *aquila*; theca furnished with a small acute projection at the tip; vesica everted wide and short with a short saccate process at the apex, protruding sideways.

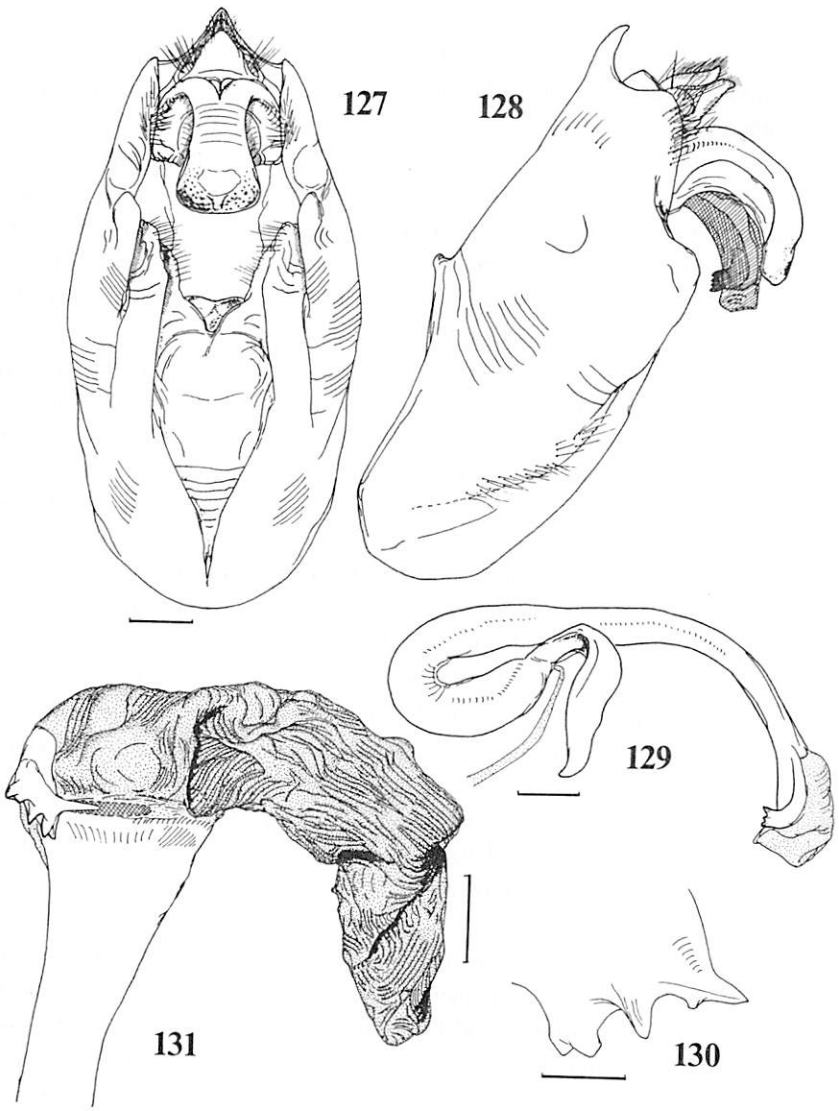
Body length (♂): 44–49 mm. ——Total length (♂): 66–69 mm. ——Expanse of forewings (♂): ca 136–137 mm.

Distribution. Simeulue.

Cryptotympana praeclara M. HAYASHI, sp. nov.
(Figs. 109, 113–114, 116, 127–131)

Holotype: ♂, Marudi, Sarawak, 10. III. 1969, T. KUNOU et Y. ARITA leg. (MH).

Paratypes: 1♂, same data as holotype (MH); 2♂♂, same data (MH); 2♂♂, same locality, 15. III. 1969, L. C. WANG leg. (MH); 1♂, same data (OMNH); 1♂, Miri, Sarawak, 11. III. 1969, T. KUNOU et Y. ARITA leg. (MH); 3♂♂, same locality and collector, 12. III. 1969 (MH); 1♂, Headquarters (1,500–1,700 m), Mt. Kinabalu, Sabah, Malaysia, 26. III. 1976 (at light), S. NAGAI leg. (EUM); 2♂♂, same locality and collector, 27. III. 1976 (at light) (EUM); 1♂, same locality and cellector, 28. III. 1976 (at light) (EUM); 1♂, Mt. Kinabalu (1,500 m), Borneo, V. 1981, T. HASEGAWA (MH); 1♂, Crocker Range (1,400 m), 16 miles NE of Keningau, Sabah, Borneo, E. Malaysia, 19. IV.



Figs. 127–131. Male genitalia of *C. praeclara* sp. nov. 127, 128: Pygofer in ventral (127) and lateral (128) views. —— 129: Theca. —— 130: An apical dentate projection of theca. —— 131: Apex of theca with vesica everted in ventral view. Scales; 1 mm (127–129), 0.5 mm (131), 0.2 mm (130).

1983, S. Nagai leg. (MH); 1 ♂, Sangasangadalem, Oost-Borneo, coll. Zoölogisch Museum acq. 1938, "P. C. M. de Greeve det., 1964: *Cryptotympana aquila* Walk." (ZMA); 1 ♂, Seria, Brunei, XI. 1970, G. Strolenberg (ZMA); 11 ♂♂, Keburao (lower part of Kayan Rv.), E. Kalimantan, Indonesia, 27–28. III. 1979, Y. Uémura leg. (MH); 1 ♂, same data,

KMNHIR 100,234 (KMNH).

Type depository: National Science Museum (Natural History), Tokyo.

Very similar to *aquila* in general appearance, but much larger; head and thorax jet-black without any distinct markings or spots; extreme base of frontoclypeus, adjacent to transfrontal suture, at middle (narrowly), a central longitudinal narrow fascia on pronotum, diagonal carinae of pronotal inner area and inner and lateral parts of cruciform elevation dark brown by individuals; golden hair-tuft spots scattered on anterolateral part of pronotal inner area, and on the anterolateral corner, area near posterolateral corner and posterior margin of mesonotum; abdomen black with each lateral margin of 3rd to 8th terga orange, forming a marginal orange stripe.

Venter of body clothed with minute golden pilosity; thorax ochreous with lateral margin of pronotal paranotum, mesoprepisternum, outer part of mesepimeron, meso- and metamerons, and metaprepiternum including central process, black; ♂ operculum bright orange, with the inner basal part black; abdomen reddish orange with 2nd sternum, excluding caudolateral margin, and a central longitudinal filiformed fascia on 3rd sternum black; caudolateral corner of 2nd segment narrowly covered with white pollinosity.

Wings opaque and black basally, clothed with golden sparse hairs, though hyaline apically; forewing opaquely black at the inner part of nodal line and along costal margin, i.e., area including cells 1st R_3, 1st R_5, R_2, 2nd R_3 and 2nd R_5 (paler); hindwing opaquely black at the area including cells 1st R_3, 2nd R_3 (paler), 1st R_5, M, CuA_1 (at base, only), CuA_2 (excepting the apex), CuP, 1A and 2A (paler centrally); veins of forewing reddish ochreous, while those of hindwing black basally and ochreous apically; costal membrane also black.

Head somewhat narrower than pronotum; frontoclypeuswide wide, not swollen anteriorly in dorsal view, 0.94× as long as wide; labium extending to but not beyond middle of central process of metaprepisternum; lateral margin of pronotum slightly divergent posteriad; mesonotum proper as long as pronotum in median length; abdomen obconical, as long as head and thorax in dorsal median length; ♂ operculum, very similar in shape to that in *acuta* and *aquila*, triangular, reaching 5th abdominal segment, with the apex obtuse and curved inwards; caudal margin of 7th abdominal sternum rounded, slightly emarginate at the middle; forewing slender with acute apex; costal membrane of forewing narrower than vein C even across their bases; vein CuP of forewing well separated from vein 1A in basal 2/3.

The ♂ operculum is slightly variable in shape (Fig. 114), as in *aquila*; there are, however, no specimens with the apices of opercula divergent caudally.

Male genitalia (Figs. 127–131). Pygofer, similar to that of *aquila*, widened near the middle, 1.88× as long as wide; ventral margin of pygofer expanded near the middle in lateral view; uncus lobe relatively long, strongly curved inwards both at base and subapex, and the apex again widened, spatulate in shape and roundly concave at the central part; theca with a dentate process composed of 4 large and 1 small teeth at the left apical surface; vesica projecting sideways beyond thecal apex, with a wide, large saccate process

at the apex, and the process perpendicular to vesica itself, or directing backwards.

Body length (♂): 47–52 mm (mean 50.0 mm). ——Total length (♂): 71–77 mm (mean 73.9 mm). ——Expanse of forewings (♂): 134–148 mm.

Distribution. E Borneo.

The distributional range of this species is restricted to the eastern half of Borneo, where both *praeclara* and *aquila* occur at the same areas in the same season. According to Dr Y. ARITA, Mr S. NAGAI and Mr Y. UÉMURA (pers. comm.), this cicada, at least ♂♂, is also attracted to light.

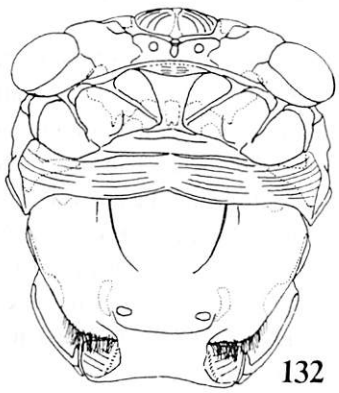
The *varicolor* group

Cryptotympana karnyi MOULTON, 1923

(Figs. 132, 134–135, 138–143)

Cryptotympana karnyi MOULTON, 1923, *J. fed. Malay Stat. Mus.*, **11**: 136.
Cryptotympana leopoldi LALLEMAND, 1931, *Mém. Brussels Mus. R. Hist. nat.*, **4**: 76. (**syn. nov.**)

Specimens examined. 1 ♂ (holotype), Medan, 22. II. 1905, de BUSSY, "J. C. Moulton det., 22/6/22: *Cryptotympana karnyi* Moulton ♂, Type" (MOULTON's handwriting) (BM); 1 ♂, same data (Ex alcohol), "Mc Gill. det.: *C pustulata* F. var. ?" (ZMA); 1 ♂, same locality, MJÖBERG, "det.: *C. limborgi* var. *Karnyi* Moult." (NRS); 1 ♂, Deli, Sumatra, L. P. de BUSSY (ZMA); 1 ♂, Sumatra, Alf. D. VICES, Museum Natura Artis Magistra, "P. C. M. de Greeve det., 1964: *Cryptotympana karnyi* Moult." (ZMA); 1 ♀, same locality, coll. NONFRIED (ISNB); 1 ♂, Kuala Simpang (lowland cultiv. area), NE Sumatra, III. 1954 a. l., A. SOLLAART, Museum Leiden (RML); 1 ♂, Urwald Assahan, Sumatra, Gust. SCHNEIDER, "H. Synave det., 1951: *Cryptotympana aquila* Vet.; *Cryptotympana pustulata* Fabricius ?" (NMB); 1 ♂, Asahan, Sumatra (NMB); 1 ♂, Assahan, Sumatra, "det.: *aquila* Wlk." (NMB); 1 ♂, Belawan, Sumatra, 28. III. 1925, Sammelreise Prof. Dr. H. WINKLER



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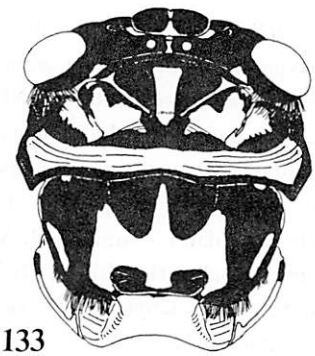

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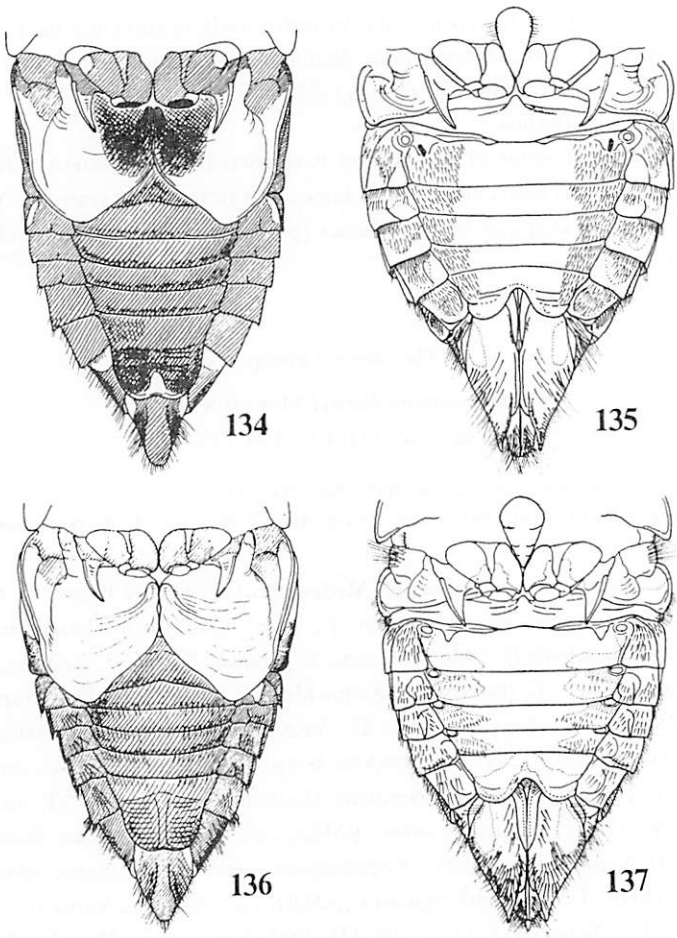
Figs. 132–133. Head and thoracic nota of *C. karnyi* (132) and *C. varicolor* (133) in the *varicolor* group.



Figs. 134–137. Venter of abdomen. 134–135, *C. karnyi*; 136–137, *varicolor*.

ded. 1924–1925, "Prof. Dr. A. Jacobi determ., 1931: *Cryptotympana karnyi* Moult." (ZMH); 1♂ (paratype of *leopoldi*), Bireun, Sumatra, 11. V. 1929, Prince LÉOPOLD, "V. Lallemand det.: *Cryptotympana leopoldi* Lall." (ISNB); 1♂, Koeala Simpang, Rantau–Atjeh, Sumatra, IV. 1931, WILLEMSE ded., "V. Lallemand det.: *Cryptotympana leopoldi* Lallem." (IPK); 1♂, Soerian, Padangs. Bovenl. (= Padangse Bovenlanden: hills behind Padang), P. O. STOLZ, "P. C. M. de Greeve det., 1964: *Cryptotympana karnyi* Moult." (RML); 2♂♂ 1♀, Padangsch Bovenland, Sumatra, J. MENZEL, "P. C. M. de Greeve det., 1964: *Cryptotympana karnyi* Moult." (RML); 1♀, Solok, Sum., P. O. STOLZ, Mus. Leiden, "P. C. M. de Greeve det., 1964: *Cryptotympana karnyi* Moult." (RML); 2♂♂, Padang-City, West Sumatra, Indonesia, 10. I. 1978 (at light), S. NAGAI leg. (MH).

Head, thorax and abdomen shining black with anterior margin of head, sometimes continuing to anterior margin of supra-antennal plate, a central longitudinal linear spot at

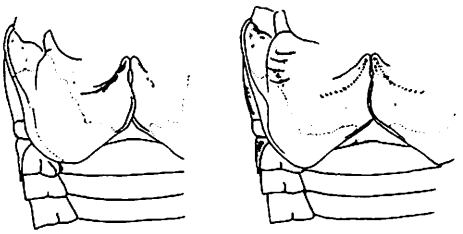
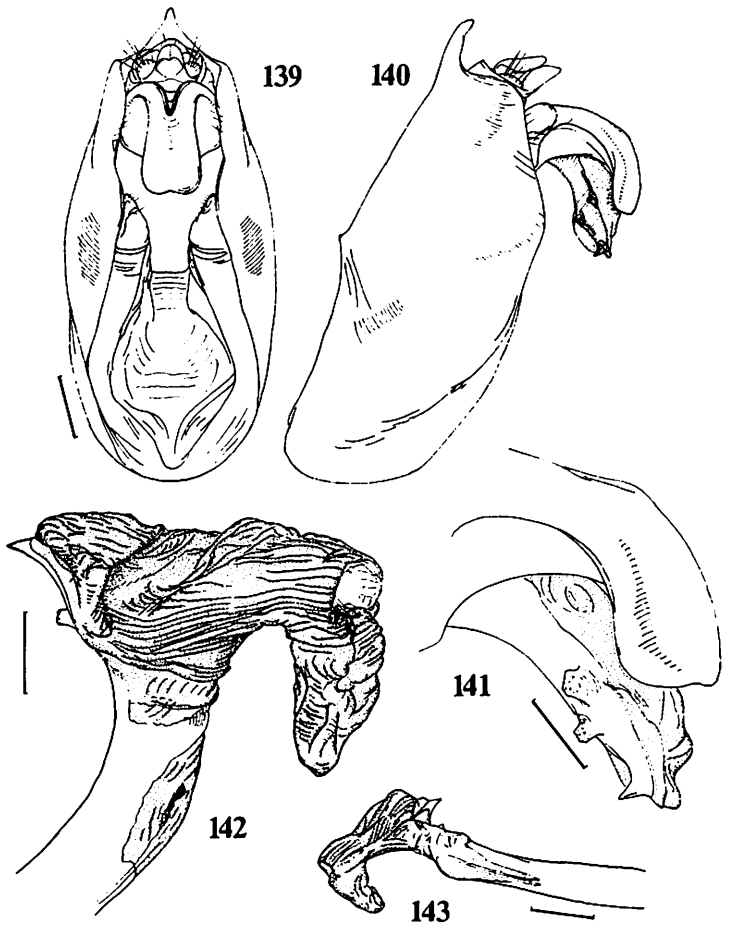


Fig. 138. Some variation in the ♂ operculum of *C. karnyi*. Left showing the paratype of "*leopoldi* LALLEMAND" (syn. nov. of *karnyi*).



Figs. 139–143. Male genitalia of *C. karnyi*. 139, 140: Pygofer in ventral (139) and lateral (140) views. —— 141: Uncus lobe and thecal apex in obliquely lateral view. —— 142, 143: Apical part of theca with vesica everted in obliquely ventral (142) and obliquely dorsal (143) views. Scales; 1 mm (139–140, 143), 0.5 mm (141–142).

the tip of frontoclypeus, a central longitudinal fascia on pronotum, posterolateral corner of pronotal outer area, a pair of spots on mesonotum (by individuals), just before cruciform elevation, a spot on lateral margin of mesonotum, which is sometimes divided into 2 parts, and cruciform elevation excluding basal arm, ochreous; timbal covering fuscous.

Venter of body clothed with minute gold-grey hairs; thorax ochreous orange with meso- and metaprepisterna, mesobasisternum, and metameron black; ♂ operculum orange with the inner part widely black (entirely orange by individuals); ♀ operculum ochreous orange with the base widely black; legs black with most part of fore femur, basal 1/2–2/3 of mid tibia, a pair of wide longitudinal fasciae on hind femur, hind tibia and basal 1/2 of 3rd hind tarsal segment ochreous orange; abdomen black with the extreme base of ♂ 8th pleuron, a pair of basal spots on ♂ 8th sternum (subgenital plate) and a small spot on lateral base of ♀ 9th tergum orange ochreous.

Wings hyaline, slightly tinged with brown; basal 1/3 of forewing, i.e., basal 1/2 of cell R, extreme base of cell 1st M_2, almost all of cell Cu, cell 1A entirely and basal cell, and basal 2/5 of hindwing darkly infuscated to black; areas along cross veins R_3–R_{4+5} and R_{4+5}–M_1 heavily and very widely infuscated, forming a distinct zigzag stripe; veins greenish olivaceous (ochreous in discoloured specimens) basally and black apically in forewing, while dark ocherous in hindwing; base of precostal membrane infuscated; fuscous parts of wings covered with minute hairs on their surfaces.

Head as wide as or slightly narrower than pronotum; frontoclypeus relatively wide, 0.97–1.20× as long as wide; pronotum nearly parallel-sided; cruciform elevation wide, and the central part as wide as basal space between parapsidal sutures; abdomen about as long as head and thorax in dorsal median length; mesepimeron projecting posteriorly with acute apex; ♂ opercula short, extending to middle of 3rd abdominal sternum and slightly overlapping each other at the inner bases, with the outer margins concavely sinuate and with the apex acutely curved at the inner side and rounded at the outer side (Fig. 138); ♂ 7th sternum not so narrowed apically with the caudal margin emarginate at the middle; caudal margin of ♀ 7th sternum deeply and triangularly incised at the middle; ♀ 9th segment ca 1.30× as long as wide; costal margin of forewing hardly arched and the apical margin nearly straight.

Male genitalia (Figs. 139–143). Pygofer oval, ca 2× as long as wide in ventral view, with the ventral margin obtusely expanded and with the ventral lobes rather close at subapices, and again widened apically with rather truncate and centrally emarginate apical margin; theca very wide and thick with 3 apical projections at the left under surface, and the apicalmost one very acute; vesica everted extending vertically to the tip of theca, bearing a saccate process at the apex; apical part of theca, together with vesica, nearly T-shaped.

Body length: 36–42 mm. ——Total length: 56–68 mm. ——Expanse of forewings: 104–117 mm.

Distribution. Sumatra.

Cryptotympana varicolor DISTANT, 1904
(Figs. 133, 136–137, 144–147)

Cryptotympana varicolor DISTANT, 1904, *Ann. Mag. nat. Hist.*, (7), **14**: 430.
Cryptotympana sumbawensis JACOBI, 1941, *Zool. Jagrb. Syst. Ökol. Geol. Biol. Tiere*, **74**: 280. (**syn. nov.**)

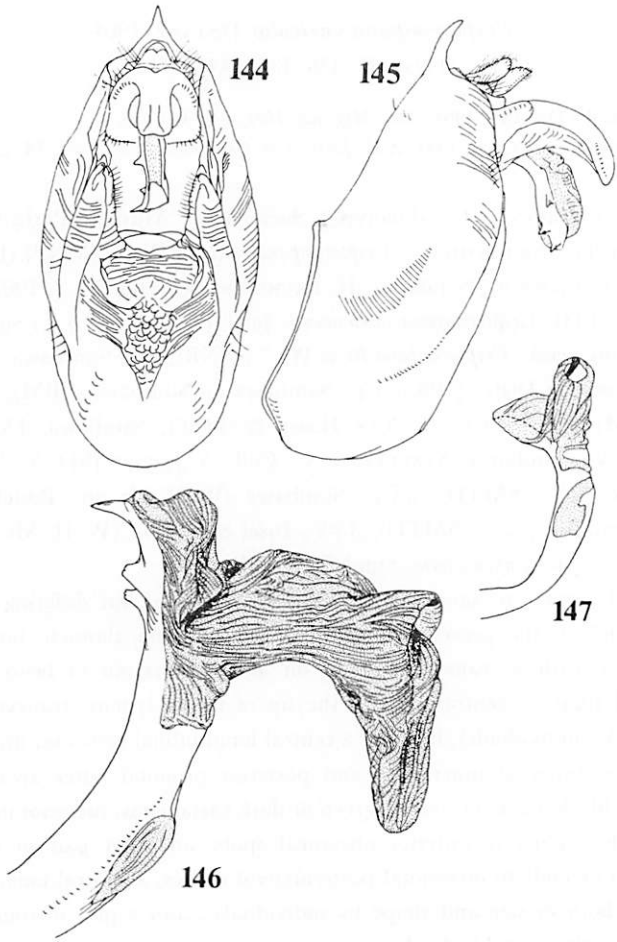
Specimens examined. 1♀ (holotype), Soembawa, "Musuem Paris: Coll. Noualhier 1903", DISTANT det. (handwriting) "*Cryptotympana varicolor* Dist." (MNP) (by photograph); 1♀ (cotype of *sumbawensis*), Sumbawa, H. FRUHSTORFER, vend. 15. I. 1902, "Prof. Dr. A. Jacobi determ., 1931: *Cryptotympana sumbawensis* Jac." (ZMH); 1♂ 1♀, Sumbawa, Iles de la Sonde, "Vyane vend.: *Cryptotympana Recta* Wk." (ISNB); 1♀, Sumbawa, "Melichar det.: *Cryptotympana varicolor* Dist." (IPK); 1♀, Sambawa (=Sumbawa) (BM); 1♀, Tambora, Sambawa (BM); 2♂♂ 2♀♀, B. Aroe Hassa (2–5000'), Sambawa, IX–X., DOHERTY (BM); 2♂♂ 1♀, Sumbawa, STAUDINGER v., Coll. A. JACOBI 1911–5, "A. Jacobi det.: *sumbawensis* Jac., *i.l.*" (SMTD); 2♀♀, Sumbawa (W. H. MUCHE, Radeberg, Ankauf.), "det.: *sumabwensis* Jac., *i.l.*" (SMTD); 3♀♀, Insel Sumbawa (W. H. MUCHE, Radeberg, Ankauf.), "det.: *Cryptotympana recta*, Sumb." (SMTD).

Allied and similar to *karnyi* MOULTON from Sumatra, but differing from it in the smaller size and in the presence of distinct markings on thoracic nota. Head and pronotum black with a transverse fascia on anterior margin of head, continuing to supra-antennal plate, a central spot at the tip of frontoclypeus, transverse carinae on frontoclypeus (by individuals), labrum, a central longitudinal fascia on pronotum, a large oblique spot on pronotal inner area and posterior pronotal outer area, more or less margined with black, dark olivaceous green or dark castaneous; mesonotum dark greenish olivaceous with 2 pairs of anterior obconical spots, an outer pair of which is much lengthened and extends to mesonotal posterolateral corner, a central longitudinal filiform spot (variable both in size and shape by individuals), and a pair of rounded spots just before cruciform elevation black (these spots sometimes fused to form a hastate marking); abdomen black with timbal covering dark brown, narrowly margined with bright orange at the outer side, and with a central basal spot on ♀ 9th tergum ochreous.

Venter of thorax clothed with white pollinosity, and of abdomen with gold-grey pilosity; thorax ochreous with meso- and metaprepisterna, lateral base of mesepimeron and base of operculum fuscous; ♂ operculum uniformly bright orange; abdomen black, sometimes with inner part of ♀ 7th sternum and a linear spot near inner margin of ♀ 9th tergum (dark) ochreous.

Wings hyaline with basal cell, extreme base of cell M, basal 1/2 of cell 1A in forewing, and basal parts of cells 1st R_3, 1st R_5, M, CuA and 1A in hindwing opaquely black; areas along 1st and 2nd cross veins of forewing heavily infuscated; veins of forewing olivaceous green basally and fuscous apically, and those of hindwing fuscous with veins M and CuA olivaceous green.

Head as wide as or slightly narrower than pronotum; eye comparatively large; dorsal



Figs. 144–147. Male genitalia of *C. varicolor*. 144, 145: Pygofer in ventral (144) and lateral (145) views. —— 146, 147: Apical part of theca with vesica everted in obliquely ventral (146) and obliquely lateral (147) views.

base of frontoclypeus deeply sulcate; frontoclypeus not so convex, 1.06–1.15× as long as wide, with a central longitudinal groove at the dorsal part and 7–9 transverse carinae on the surface; anterior central part, inside inner diagonal groove on pronotum, convex dorsally; pronotal lateral margin hardly sinuate; mesonotum proper about as long as pronotum in median length; central part of cruciform elevation much depressed and widened, about as wide as the anterior distance between parapsidal sutures; abdomen obconical and about as long as head and thorax in dorsal median length in ♂♂, while cuspidate and shorter than in ♀♀; timbal covering somewhat globose at the anterior apical part with the anterior margin slightly emarginate; ♂ opercula, similar to *karnyi*, with the outer margins more oblique and inner margins not overlapping but contiguous at

the inner bases; ♂ 7th sternum longitudinally keeled at the middle, with the lateral margin not so concavely sinuate as in *karnyi* and apical margin rather truncate; caudal margin of ♀ 7th sternum deeply incised at the middle; ♀ 9th tergum wider, ca 1.05× as long as wide in ventral view; shape of wing as well as venation also closely similar to those of *karnyi*.

Male genitalia (Figs. 144–147). Similar to those of *karnyi*; pygofer elliptical, ca 1.86× as long as wide, with a pair of ventral lobes more apart from each other; uncus lobe shorter and narrower towards apex, evenly but not strongly curved inwards; theca with 3 apical projections arranged as in *karnyi*, and the apicalmost one longer and more acute than in *karnyi*; vesica and apical saccate process of vesica also similar to those of *karnyi*, though narrower and longer.

Body length: 32–37 mm. ——Total length: 53–60 mm. ——Expanse of forewings: 102–107 mm.

Distribution. Sumbawa.

This species was described on the bais of 1 ♀ (MNP) form Sumbawa by DISTANT (1904b), who afterwards (1906a) reproduced the original description, together with an additional record from Ceylon on the basis of ♀ specimen(s) collected by GREEN. Nevertheless, the 1 ♂ specimen from Ceylon has been preserved in BM, labelling "Type" (in a red circle) and "*varicolor* Dist." (DISTANT's handwriting). Therefore, this specimen cannot be regarded as the type of *varicolor*. JACOBI examined both races from these areas, and confirmed that they are specifically different, giving a new name, *sumbawensis*, to the Sumbawa individuals, (JACOBI 1941). Since *varicolor* was described from Sumbawa not from Ceylon, this is apparently his error.

According to my comparative study on the ♂ specimen bearing the type label of "*varicolor*" from Ceylon, it was confirmed that the individuals from this area belong to *exalbida* DISTANT (cf. the part II of this paper); this specimen bearing the type label is teneral and less tinted, looking like a pale coloured individual of true *varicolor* at a glance.

In conclusion, "Ceylon" is herewith excluded from the distributional range of *varicolor* DISTANT.

The *recta* group

Cryptotympana recta (WALKER, 1850)
(Figs. 148, 156–157, 161–169)

Fidicina recta WALKER, 1850, *List Hom. Brit. Mus.*, **1**: 79.
Cryptotympana recta: STÅL, 1862, *Öfv. K. Vet.-Akad. Förh.*, **19**: 483.

Specimens examined. 1 ♂, Rég. de Hoa-Binh, A. de COOMAN (MNP); 1 ♂ 1 ♀, Montes Manson (2–3000 ft), Tonkin, IV–V., H. FRUHSTORFER, Coll. A. JACOBI 1911–5, det. "*corvus* (Wlk.)" (SMTD); 1 ♂, Laos, MOUHOT, 68–4 (BM); 1 ♂, Luang Prabang, Pak. Neun., Indo China, 28. IX. 1918, R. V. de SALVAZA, Indo China. R. V. de SALVAZA

1918–1 (BM); 1♀, Pak Lay, Laos, 2. VIII. 1918, R. V. de SALVAZA, Indo China. R. V. de SALVAZA 1918–1 (BM); 1♀, X. Khouang (=Xieng Khouang), Laos, 10. IX. 1921, R. Vitalis de SALVAZA (ISNB); 1♂, Chiengmai, Siam, Mrs. McKEAN, "B. Uvarov det., 1930: *Cryptotympana recta* Wlk." (NMNH); 1♂, same locality, 30. VII. 1968, T. HIDAKA (NIAES); 1♂, Samoeng, Chiangmai, Thailand, 2. IX. 1985 (MH); 1♂, Thailand (MH); 1♂, Nepal India, 1916 1, coll. A. JACOBI, det. "*recta* (Wlk.)" (SMTD); 1♂, Ramandroog (600–1,000 m), Madras-Presid., Vorderindien, 4. XI. 1919, P. THOMAS, vend. 3. 5. 1920, "Prof. Dr. A. Jacobi determ., 1931: *Cryptotympana recta* Wlk." (ZMH); 1♀, same locality, 6. XI. 1919, H. ZUSEHLAG, vend. 10. 6. 1920, "Prof. Dr. A. Jacobi determ., 1931: *Cryptotympana recta* Wlk." (ZMH); 1♂, without locality, DISTANT-Coll. 1911–383 (BM).

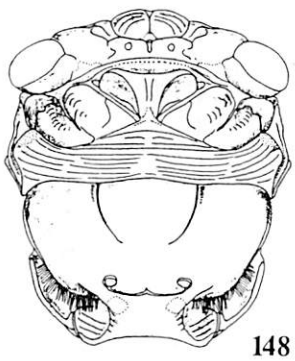
Body almost entirely shining pitchy black with a transverse linear spot on anterior margin of vertex laterally ochreous (sometimes reduced by individuals) and with labrum, a pair of faint spots on cruciform elevation and central part of timbal covering (faintly) dark brown; fine golden hair-tuft appearing, as a spot, on the inner margin of posterolateral corner of pronotal outer area, anterior part of mesonotum and an area on the lateral surface near posterolateral corner of mesonotum.

Venter mostly black clothed with minute pale pilosity, especially on thorax; thorax black with apical part of lateral dilatation of mesepimeron, outer margin of meracanthus on metameron and apical margin of ♂ operculum pale ochreous; ♂ operculum ochreous orange with the inner part widely much infuscated (sometimes entirely ochreous orange in specimens from SE India and Nepal); abdomen also shining black with lateral margin of 2nd pleuron (auditory capsule) and basal part of 3rd pleuron more or less covered with white pollinosity; legs black with upper side of fore and mid femora, transverse band towards base of mid tibia, and hind tibia except for the apex dark ochreous.

Wings hyaline, very slightly smoky, with basal 1/6–1/5 of forewing and basal 1/4 of hindwing black; forewing with the black part extending beyond basal cell to the extreme bases of cells R (by individuals) and M, basal 1/4–2/5 of cell Cu and basal 1/2 of cell 1A; areas along 1st and 2nd cross veins infuscated, forming 2 fuscous spots on forewing; veins mostly olivaceous green before nodal line with the apical ones fuscous to black in forewing, while fuscous with veins CuA, CuP and 1A ochreous in hindwing; vannus (cell 2A) widely black at the base.

Head narrower than pronotum, with central transverse sulcation along base of tylus; frontoclypeus widely and roundly swollen, 0.94–1.00× as long as wide, with 8–9 transverse striations and a central longitudinal groove, continuing to the dorsal surface; labium long, extending near to or a little beyond central metaprepisternal process (extending slightly beyond hind coxae in specimens from SE India); pronotum trapezoidal and the lateral margin hardly sinuate; posterior margin of pronotal outer area not waved; mesonotum almost as long as pronotum in median length, with parapsidal suture more or

Figs. 148–155. Head and thoracic nota. 148, *C. recta*; 149, *nitidula* sp. nov.; 150, *robinsoni*; 151, *insularis*; 152, *limborgi*; 153, *gracilis* sp. nov.; 154, *moultoni* sp. nov.; 155, *edwardsi*.



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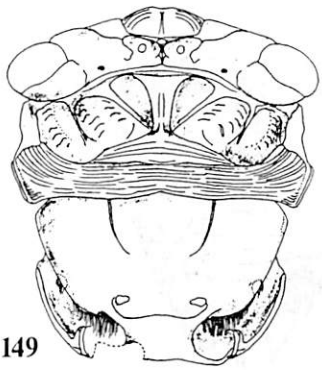

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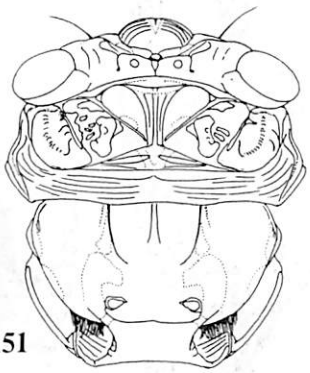

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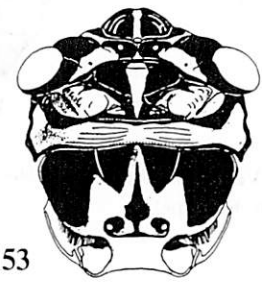

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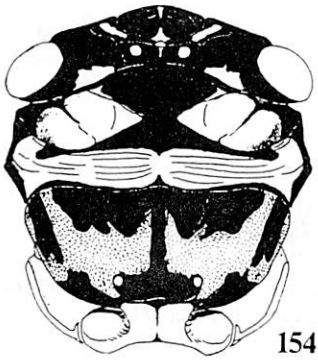

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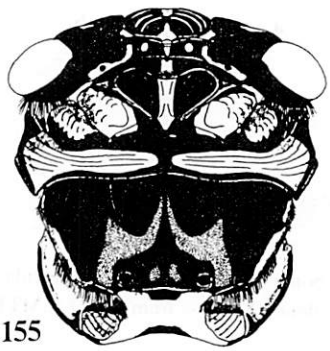

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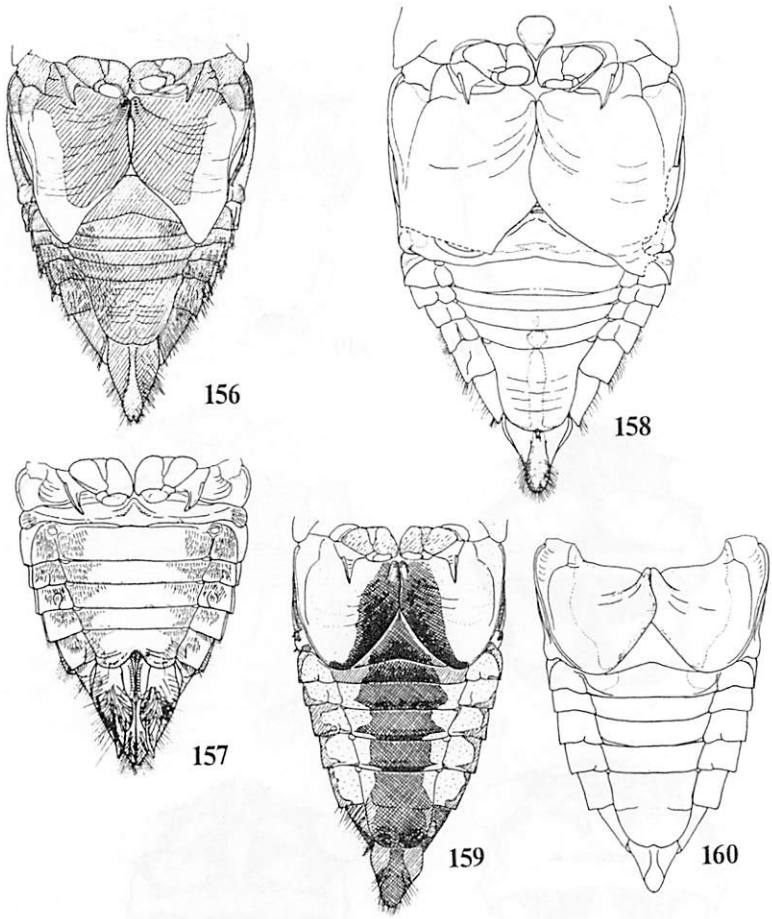


Figs. 156–160. Venter of abdomen. 156–157, *C. recta*; 158, *nitidula* sp. nov.; 159–160, *robinsoni* (160, holotype).

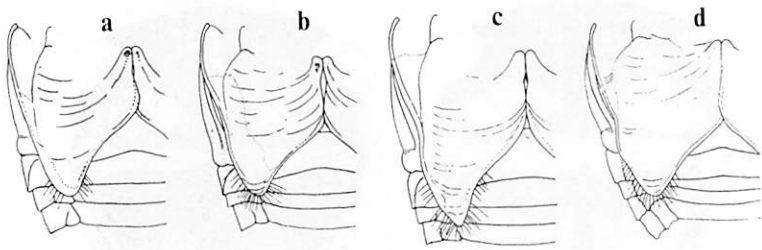
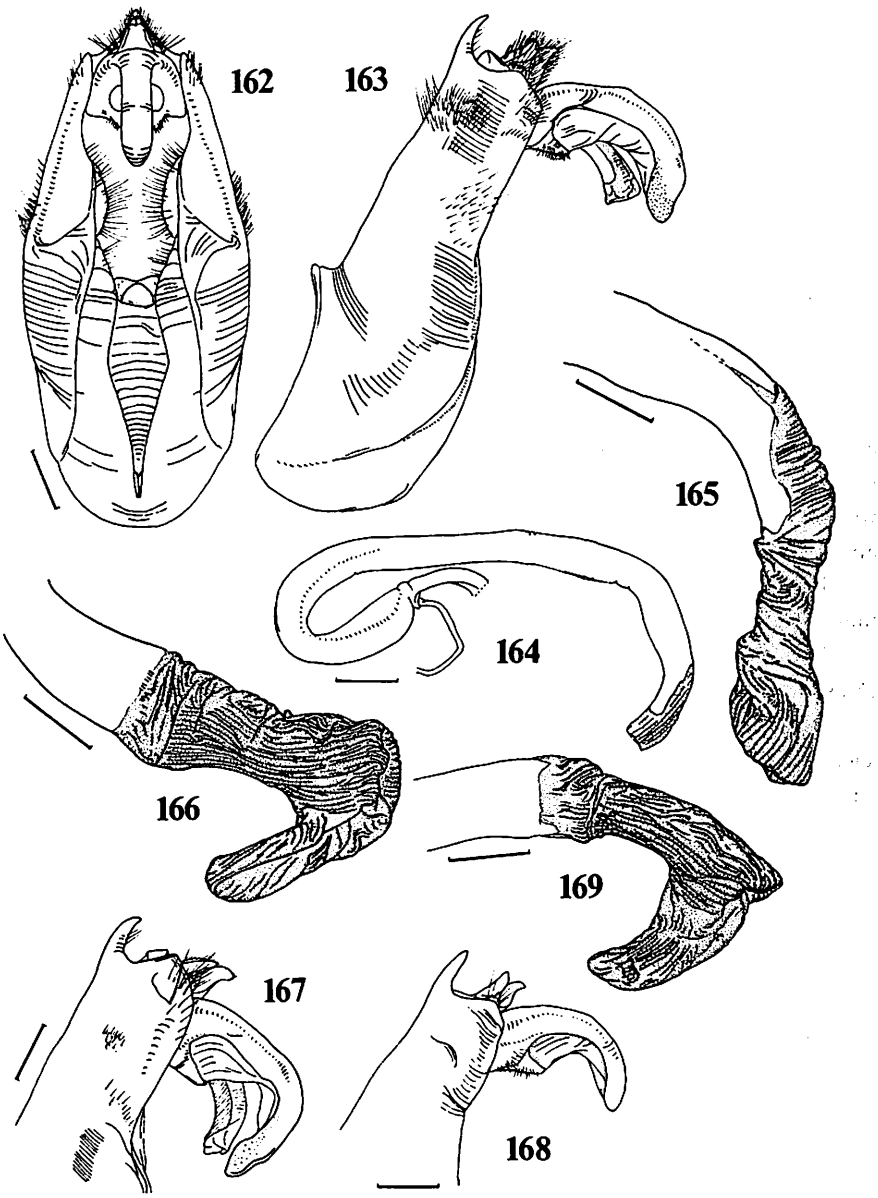


Fig. 161. Some variations in the ♂ opercula of *C. recta*. a, From Tonkin (SMTD); b, from N Thailand (MH); c, from Nepal (SMTD); d, from SE India (ZMH).



Figs. 162–169. Male genitalia of *C. recta*. 162, 163, 167, 168: Pygofer in ventral (162) and lateral (163, 167, 168) views. —— 164: Theca. —— 165, 166, 169: Apical part of theca with vesica everted in lateral (165) and obliquely ventral (166, 169) views. 167, An individual from Laos (BM) with elongate uncus lobe; 168–169, an individual from SE India. Scales; 1 mm (162–164, 167–168), 0.5 mm (165–166, 169).

less obscure; abdomen obconical, as long as head and thorax in ♂♂ and shorter than that in ♀♀; basal margin of ♂ 2nd tergum strongly expanded at the middle; lateral dilatation of mesepimeron triangular, directing outwards posteriorly; ♂ opercula of an elongate triangle in shape with the outer margins slightly emarginate, inner margins overlapping basally and concavely sinuate apcially, and the apices acute and at least reaching 4th abdominal sternum; ♂ 7th sternum with emarginate caudal margin; caudal marign of ♀ 7th sternum triangularly incised at the middle; ♀ 9th segment wide and somewhat swollen, about as long as wide; vein CuP of forewing well separated from vein 1A in basal 2/3.

Male genitalia (Figs. 162–169). Pygofer larger and very elongate, ca 2.04–2.09× as long as wide, narrowed and paralleled towards apex in lateral view, and the ventral margin more or less rolling inwards; apices of pygoforal ventral lobes concealed by the ventral margin; uncus lobe very long and narrow, nearly straight or gently curved basally and strongly curved inwards behind middle with an acute projection on each side at lower base, distinctly hooked; theca very long, not narrowed to the apex, curved at subapex, without projection at the tip; vesica rather short with a narrow saccate process at the apex, which protrudes from the right side and directs obliquely backwards.

Body length: ♂ 34–44 mm, ♀ 31–38 mm. ——Total length: ♂ 54–64 mm, ♀ 53–60 mm. ——Expanse of forewings: 104–122 mm.

Distribution. India (Assam, Bengal and Madras), Bangladesh (Sylhet), China (KERSHAW 1903), Vietnam, Laos and Thailand.

By individuals and/or local populations, *recta* shows some infraspecific variations in such characters as the shape and coloration of ♂ operculum (Fig. 161), basal black part of wings, the apical extension of uncus lobe and the space between pygoforal ventral lobes in ♂ genitalia, etc. Detailed investigations are needed for individuals from SE India (Madras) when sufficient material is available (Figs. 161–d, 168–169).

Cryptotympana nitidula M. HAYASHI, sp. nov.
(Figs. 149, 158, 170–171)

Holotype: ♂, Caleu, Annam (chaine-annamitique), VII. 1921, M. MAUNIER (MNP).

Type depository: Muséum National d'Histoire Naturelle, Paris.

At a glance, similar to *recta* as well as *mandarina* DISTANT (the *corvus* group; cf. part II of this paper). Body grossy black with pronotal inner area and timbal covering fuscous brown and with the extreme lateral margins of 3rd to 8th abdominal terga orange ochreous.

Venter of head and thorax black with labrum, mesepimeron and operculum ochreous orange; abdomen ochreous orange with a central spot on 2nd sternum and central parts of 4th to 8th sterna fuscous brown, forming a central longitudinal stripe on abdomen; fore and mid legs black or fuscous brown with upper surfaces of femora and a basal transverse band on mid tibia ochreous; hind leg ochreous orange with coxa, trochanter, a linear

longitudinal spot on femur and both base and apex of tibia fuscous brown.

Wings opaquely fuscous brown basally, and hyaline apically; forewing fuscous brown to black at most in the basal part to or slightly before nodal line, while hindwing in more than basal 1/3; veins of forewing ochreous with the apical ones black, and those of hindwing fuscous or black with veins CuA_1 and CuA_2 basally, dark ochreous; fuscous spots narrowly appearing along 1st and 2nd cross veins of forewing; basal membrane entirely black.

Head and thorax similar to those of *mandarina* in general shape; frontoclypeus narrower and more globose, about as long as wide, with 8 distinct transverse carinae; mesonotum proper as long as pronotum in median length; abdomen longer than head and thorax in dorsal median length; apex of mesepimeron triangular and outwardly projecting; opercula rather triangular (the apices broken) with the inner margins overlapping each other towards the bases and nearly straight apically; basal margin of 2nd abdominal tergum strongly and triangularly expanded at the middle; 7th sternum not becoming so narrower towards apex, with caudal margin widely rounded; forewing with costal margin nearly straight, slightly bent at node and with stalk of veins 1M and 2M very short, distinctly shorter than vein 1M before nodal line; 1st and 2nd cross veins of forewing short, nearly transverse; vein 1A of forewing moderately sinuate.

Male genitalia (Figs. 170–171). Pygofer ovate, ca 1.72× as long as wide in ventral view, with a caudal beak rotundate and caudoventral corner angulate; uncus lobe long and club-like, inwardly bent near the middle (slightly basal); tip of theca with no projection.

Body length (♂): 44 mm. ——Total length (♂): 62 mm. ——Expanse of forewings (♂): ca 121 mm.

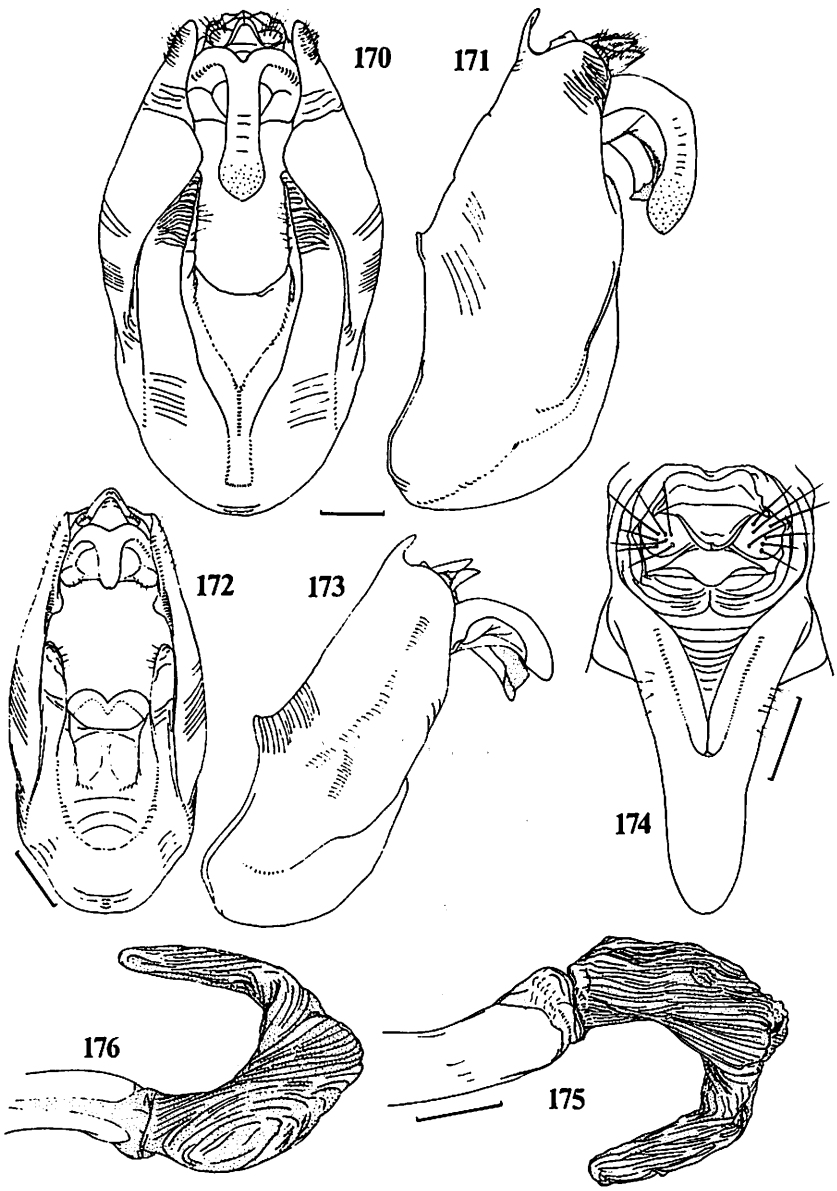
Distribution. Vietnam (Annam).

Cryptotympana robinsoni MOULTON, 1923
(Figs. 150, 159–160, 172–176)

Cryptotympana robinsoni MOULTON, 1923, *J. fed Malay Stat. Mus.*, **11**: 136.

Specimens examined: 1 ♂ (holotype), without locality, P. M. (Perak Museum) Coll., MOULTON det. (handwriting) "*Cryptotympana robinsoni*, Moulton. Type ♂, 1922" (BM); 1 ♂, Taiping, Perak, West Malaysia, II. 1976, K. C. LIEW leg. (MH).

Head black with linear fascia on anterior margin of vertex, a central subulate spot on frontoclypeus, a central ridge of clypeus, rostrum except for the tip black, and a pair of inner lateral spots on posterior margin of vertex, ochreous more or less darkened; pronotum castaneous with a central longitudinal fascia, much widened both anteriad and posteriad, and anterolateral corner of inner area, black and with outer area olivaceous, narrowly margined with black; mesonotum black with a pair of anterior filiform spots, divergent posteriorly, a lateral large oblique spot, connected with the central spot and



Figs. 170–176. Male genitalia of *C. nitidula* sp. nov. (170–171) and *C. robinsoni* (172–176). 170–173: Pygofer in ventral (170, 172) and lateral (171, 173) views. —— 174: Full caudal view of uncus lobe. —— 175, 176: Apex of theca with vesica everted in obliquely ventral (175) and obliquely dorsal (176) views. Scales; 1 mm (170–173), 0.5 mm (174–176).

basal arm of cruciform elevation, and the elevation except for middle of basal margin black, castaneous to olivaceous; abdomen entirely black with gold-greyish pilosity.

Ventral part of body black clothed with thick white pollinosity laterally (removed in the holotype); thorax black with meso- and metatrochantins ochreous; legs entirely ochreous; ♂ operculum black at inner 2/3 and ochreous at the rest, and the outer 2/3 covered with thick white pollinosity; abdomen black with lateral parts of 3rd and 4th sterna, outer lateral margins of 3rd to 7th pleur and lateral base of 8th sternum (subgenital plate) castaneous or ochreous.

Wings hyaline with basal 1/4 infuscated to black; veins ochreous tinged with orange before nodal line and fuscous apically in forewing, while fuscous or black with veins CuA and CuP pale ochreous in apical 1/2–2/3 in hindwing; areas along 1st and 2nd cross veins of forewing very faintly infuscated; apex of basal membrane in hindwing ocularly hyaline.

Body very slender; head about as wide as pronotum; frontoclypeus moderately and roundly swollen anteriad, ca 0.97× as long as wide, with 10 transverse striations on the surface; labium extending to slightly before the middle of central metaprepisternal process; mesonotum proper globose dorsally, about as long as pronotum in median length; central part of cruciform elevation more or less depressed, as wide as the space between parapsidal sutures at the bases; abdomen long and slender, distinctly longer than head and thorax in dorsal median length; 2nd abdominal tergum about as long as or slightly longer than the 3rd at the middle; lateral dilatation of mesepimeron short, slightly turned upwards to the apex; ♂ operculum short and rounded, very slightly beyond 2nd abdominal sternum; 7th sternum not so tapered towards apex, with the caudal margin widely and evenly rounded, emarginate at the middle; forewing slender with subacute apex; vein CuP of forewing well separated from vein 1A in basal 4/5; hindwing more than 1/2 the length of forewing.

Male genitalia (Figs. 172–176). Pygofer oval, widened before middle, ca 2.03× as long as wide, with a pair of short ventral lobes, widely apart from each other; uncus lobe short, gradually narrowed to apex, and widened apicad in lateral view with obtuse apex; theca narrow without projection at apex; vesica thick, protruding obliquely, with a long slender saccate process at the tip, longer than vesica itself, perpendicular to vesica and further curved rather backwards.

Body length (♂): 37 mm. ——Total length (♂): 53 mm. ——Expanse of forewings (♂): 94–101 mm.

Distribution. Malay Peninsula (Perak).

The 1 ♂ specimen recorded as *robinsoni* from Sumatra by MOULTON (1923) belongs to a different species, *moultoni* (*vide infra*). *Cryptotympana robinsoni* is, therefore, localized and probably endemic to the central part of the Malay Peninsula, Perak and its neighbourings.

Cryptotympana insularis DISTANT, 1887
(Figs. 151, 177–178, 182–188)

Cryptotympana insularis DISTANT, 1887, *Ann. Mag. nat. Hist.*, (5), **20**: 416.

LECTOTYPE: ♂, Port Blair (Andaman Isls.), Meldola, DISTANT det. (handwriting) "*Cryptotympana insularis* Dist. type" (BM).

PARALECTOTYPE: 1♀, same data as lectotype, DISTANT-Coll. 1911–383, DISTANT det. (handwriting) "*Cryptotympana insularis* Dist. Syntype ♀" (BM).

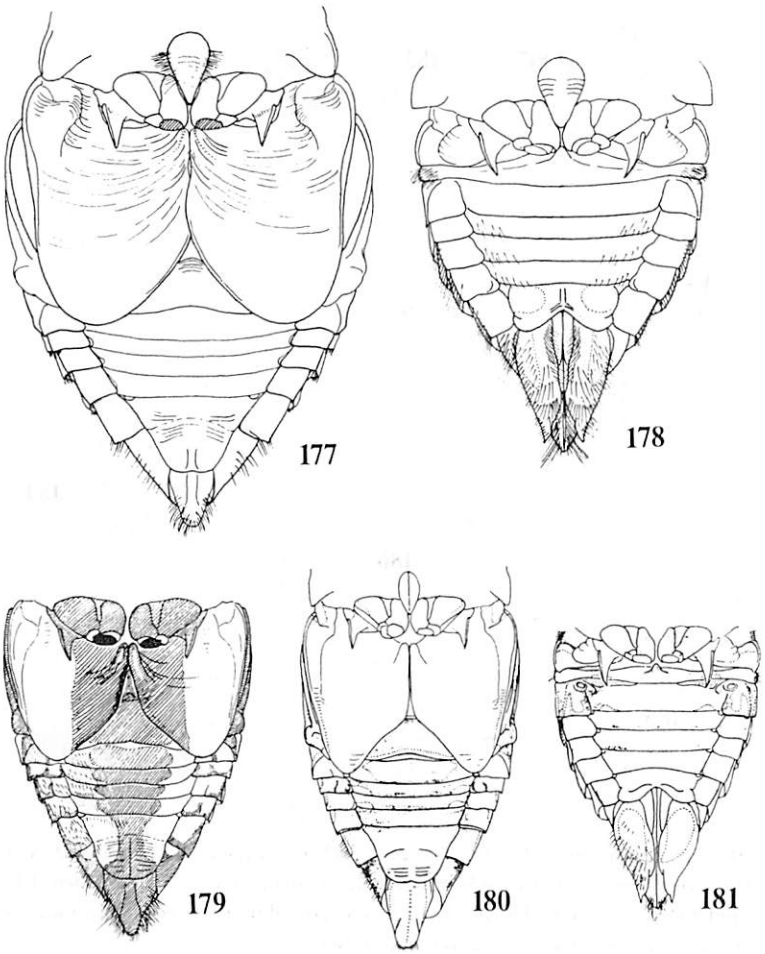
Other specimens examined: 1♂, Andamans, ATKINSON coll. 92–6, DISTANT det. "*insularis* Dist." (BM); 1♂, Ins. Andaman, STAUDINGER, det. "*Cryptotympana insularis* Dist." (NRS).

Body dark castaneous to olivaceous, without distinct spots or markings, with anterior margin of head, a central longitudinal fascia on pronotum, inner part of pronotal outer area, a central W-shaped marking and lateral fascia on mesonotum, central part of cruciform elevation, timbal covering, and a small spot near each lateal side of 3rd to 7th terga, paler and faintly ochreous.

Venter of thorax ochrous with metaprepisternum fuscous; ♂ operculum ochreous, slightly infuscated towards base; legs ochreous or dark castaneous with fore femur and tibia (except for the base), inner parts of mid and hind coxae, apical part of mid and hind tibiae, fore and mid tarsi, and both apical and basal parts of hind tarsus infuscated or black.

Wings hyaline, slightly smoky; forewing with basal cell opaquely pale ochreous tinged with orange and with base of cell 1A and marginal narrow area behind vein 2A black; veins ochreous to testaceous and infuscated apically in forewing, while fuscous with veins CuA, CuP and 1A ochreous or testaceous in hindwing; areas along and near cross veins R_3–R_{4+5} and R_{4+5}–M_1 faintly infuscated, forming a faint zigzag marking on forewing.

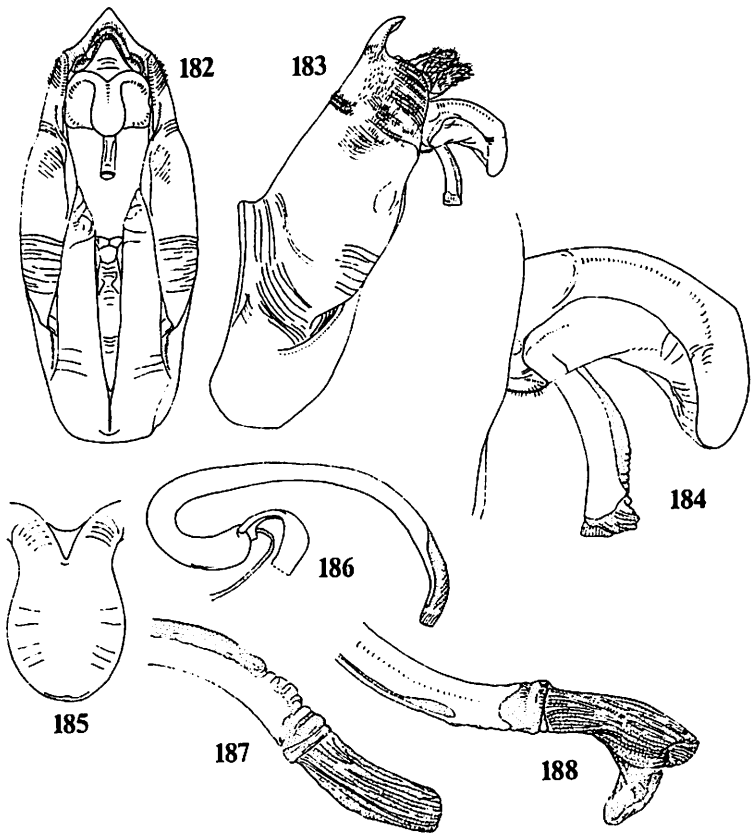
Head narrower than pronotum; frontoclypeus narrow, roundly swollen anteriorly, about as long as wide, with 8–9 transverse striations on the surface; labium extending to apical tip of central metaprepisteranl process; pronotum rather trapezoidal with lateral margin more or less emarginate; pronotal outer area not undulating posteriorly, with slight posterolateral dilatation; mesonotum proper about as long as pronotum in median length; cruciform elevation wide, depressed at the central part; ♂ abdomen very wide, especially across 2nd tergum, nearly 1.5× as wide as the base of mesonotum; ♀ abdomen, on the contrary, very short and cuspidate, shorter than head and thorax in median length; timbal covering rather flattened, with evenly rounded margin; mesepimeron spherically swollen, with lateral dilatation short and triangular; ♂ operculum large and oblong, about 1/2 the length of abdomen, with the outer margin slightly concavely sinuate and apical margin widely rounded and extending nearly to or slightly beyond 2nd abdominal sternum, and both opercula very slightly overlapping each other at the inner bases; pleuron very narrow in comparison with sternal width in ♂♂; 7th



Figs. 177–181. Venter of abdomen. 177–178, C. *insularis*; 179, *limborgi*; 180–181, *gracilis* sp. nov.

sternum triangular, with the caudal margin narrowly truncate at the middle in ♂♂, while triangularly incised at the middle in ♀♀; ♂ 8th sternum very slender, rolling up as a V-shaped plate in apical view; ♀ 9th tergum conical, relatively small, narrower than the base of 7th sternum, ca 1.70× as long as wide in ventral view; forewing wide, with gently curved costal margin and straight apical margin; nodal line well defined by a ridge of membrane; vein CuP of forewing separated from vein 1A in about basal 1/3; hindwing rather slender, with veins CuP and 1A slightly arched and cell 2nd R_3 long, a little shorter than cell 2nd R_5.

Male genitalia (Figs. 182–188). Pygofer oblong, ca 2.24× as long as wide in ventral view, with a central caudal beak of a wide triangle in shape and a pair of pygoforal ventral lobes close to each other; uncus lobe with an obtuse projection on each side at lower base,



Figs. 182–188. Male genitalia of *C. insularis*. 182, 183: Pygofer in ventral (182) and lateral (183) views. —— 184: Uncus lobe and theca in lateral view. —— 185: Uncus lobe in full caudal view. —— 186: Theca. —— 187, 188: Apical part of theca with vesica everted in lateral (187) and obliquely ventral (188) views.

and the lobe rather short and narrow spatulate in ventral view; basal plate wide, strongly bent downwards; theca narrow and gently curved towards apex, lacking an apical projection; vesica short and cylindrical with a narrow and further short saccate process at the apex.

Body length: ♂ 38–42 mm, ♀ 34 mm. ——Total length (♂): 57 mm. ——Expanse of forewings: 114–120 mm.

Distribution. Andaman Islands.

Cryptotympana limborgi DISTANT, 1888

(Figs. 152, 179, 189–195)

Cryptotympana recta: DISTANT, 1879, *J. Asiat. Soc. Bengal*, **48**: 38; ATKINSON, 1884, *J. Asiat. Soc. Bengal*,

53: 230 (nec WALKER, 1850).
Cryptotympana limborgi DISTANT, 1888, *Ann. Mag. nat. Hist.*, (6), **1**: 296.

DISTANT (1888a) described this species based on 2♂♂ specimens; one collected by LIMBORG and the other by DOHERTY. Although the 2♂♂ of the type series have been preserved in the collection of BM, we cannot find out the specimen collected "by LIMBORG" at Tenasserim, among them. Instead, 1♂ collected by J. W. M. from the same locality has been reposed at BM, attached the "Type" label (in a red circle) and DISTANT's determination. Thus, I designate this specimen as the lectotype, referring to the opinion of Dr BROOMFIELD (BM).

LECTOTYPE: ♂, Ten (asserim), J. W. M., DISTANT det. (handwriting) "*Cryptotympana limborgi* Dist. type" (BM).

PARALECTOTYPE: 1♂, Tenass Vall., Myitta, DOHERTY, DISTANT-Coll. 1911-383, DISTANT det. (handwriting) "*limborgi* Dist." (BM).

Other specimen examined: 1♂, without data, DISTANT-Coll. 1911-383 (BM).

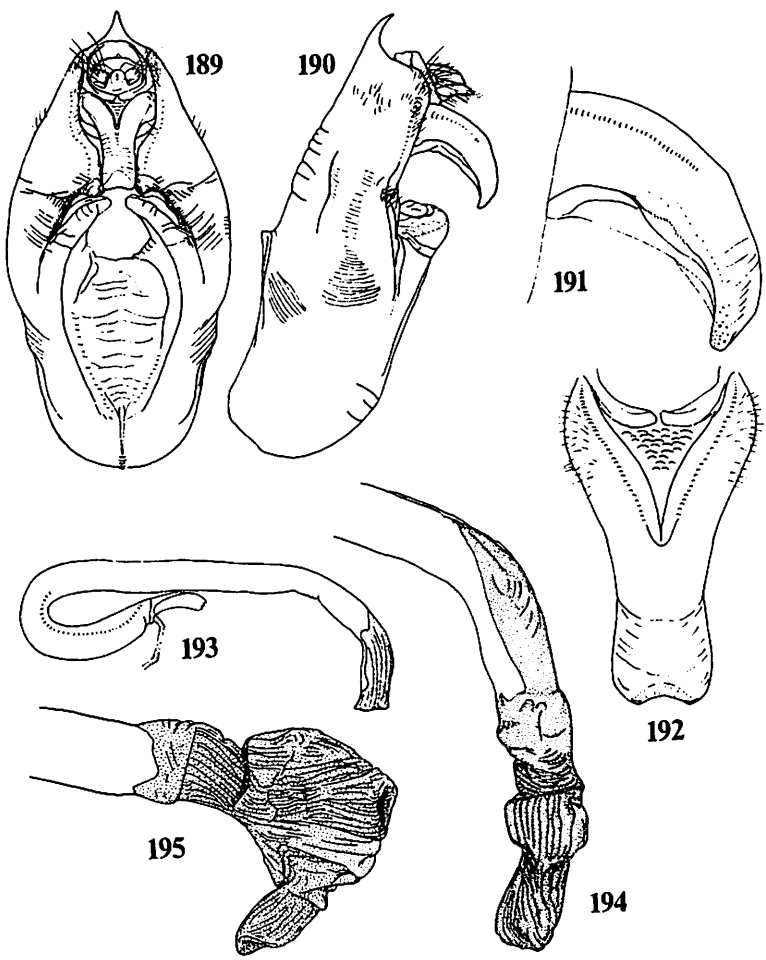
Head black with anterior margin of vertex, a central longitudinal fascia and lateral part of frontoclypeus, labrum and a pair of posterior spots on vertex, situated on outer part of basal ocellus, dark olivaceous; pronotum dark castaneous in the inner area and dark olivaceous in the outer area, with a pair of central longitudinal fasciae, widened anteriorly and including an anterior discal castaneous spot, and a central transverse discal spot on the anterior margin of outer area black; mesonotum dark castaneous with a pair of anterior central obconical spots, a diagonal fascia on the lateral surface and a central narrow fascia, just before cruciform elevation, black; abdomen fuscous with lateral part of timbal covering and central parts of 2nd-6th terga dark castaneous; dorsum of body covered with minute golden hairs in fresh specimens.

Venter of body also densely tomentose by minute gold-grey hairs; thorax dark castaneous with the central part, including coxae, black, forming a central wide longitudinal black stripe, continuing to inner part of opercula and further to abdominal sterna; meso- and metepimerons, meso- and metamerons, metaprepisternum clothed with white pollinosity; ♂ operculum ochreous orange at the outer side and black at the inner side; legs black or fuscous with mid tibia and hind femur, tibia and tarsus, except for the extreme base, dark ochreous; abdome dark castaneous with a central part of each sternum and most part of 7th sternum black, forming a central longitudinal wide stripe.

Wings hyaline; veins dark ochreous, sometimes tinged with green, and fuscous apically, with veins M and Cu of forewing and vein M of hindwing tinged with testaceous; bases of wings black, and black part slightly extending beyond basal cell in forewing; vannus more or less translucently white; areas along 1st and 2nd cross veins roundy infuscated, forming 2 apical round spots on forewing.

Head as wide as or slightly wider than pronotum; frontoclypeus somewhat depressed anteriorly, 0.94-0.98× as long as wide in frontal view, bearing 7-9 transverse striations on the surface; labium reaching anterior angle of central metaprepisternal process;

anterior margin of vertex deeply sulcate at the middle; basal ocellus very close to anterior margin of pronotum; thorax very convex dorsally; parapsidal sutures on mesonotum widely apart anteriad from each other and strongly curved inwards; cruciform elevation flattened with the central part nearly square; abdomen longer than head and thorax in dorsal median length; ♂ opercula short and rounded apically with the outer margins oblique, more or less beyond 2nd abdominal sternum, contiguous at the inner bases; caudal margin of 7th sternum evenly rounded; forewing slender and rounded apically, with the costal margin not arched and the outer (apical) margin nearly straight; stalk of veins 1M and 2M almost as long as vein 1M before nodal line; cells Cu and 1A very short;



Figs. 189–195. Male genitalia of *C. limborgi*. 189, 190: Pygofer in ventral (189) and lateral (190) views. —— 191: Uncus lobe in lateral view. —— 192: Uncus lobe in full caudal view. —— 193: Theca. —— 194, 195: Apical part of theca with vesica everted in lateral (194) and obliquely ventral (195) views.

vein CuP of forewing separated from 1A in basal 1/2; hindwing shorter than 1/2 the length of forewing; veins M_{2+3} and M_4 of hindwing very close to each other towards base (cell M_3 getting much narrower to the base).

Male genitalia (Figs. 189–195). Pygofer oval, widened at the middle and narrowed at the apex, ca 1.85× as long as wide; ventral margin of pygofer rolling inwards at subapex; a pair of ventral lobes of pygofer distinct with subacute tip, slightly curved inwards, uncus lobe short with truncate apex, gradually narrowed apicad in lateral view; theca relatively thick, without projection at the tip; basal plate slightly curved; vesica widened apically, with a short and narrow short saccate process.

Body length (♂): 32–33 mm. ——Expanse of forewings (♂): 92–95 mm.

Distribution. Burma (Tenasserim).

Cryptotympana gracilis M. Hayashi, sp. nov.
(Figs. 153, 180–181, 196–197, 198–202)

Holotype: ♂, Mae Sa Water-fall (ca 500 m), Chiang Mai, Thailand, 27. III. 1981, Y. Uémura leg. (MH).

Paratypes: 1♀, same data as holotype (MH); 1♀, Mae Hong Song, N-Thai., 11. V. 1977, S. Yanaguchi & T. Aoki leg. (TASY); 1♂ 3♀♀, Urhai Thani (600 m), Thaïlande, III–IV. 1984, R. Eve. réc., Muséum Paris (MNP).

Type depository: National Institute of Agro-Environmental Sciences, Tsukuda.

Small species. Head black with basal part of supra-antennal plate, a central longitudinal fascia and transverse carinae (narrowly) on frontoclypeus and inner lateral part of vertex posteriorly, dark ochreous; pronotum dark ochreous or dark castaneous with a pair of central longitudinal fasciae, widened anteriad, outer margin of inner area, and posterolateral margins of outer area, black; mesonotum black with a central W-shaped marking, developed posteriad to base of cruciform elevation, and the elevation dark castaneous; abdomen also grossy black with outer 1/2 of timbal covering dark ochreous, and with a pair of central deltoid spots on ♂ 2nd tergum, dark castaneous.

Venter of thorax castaneous, partly infuscated with lateral part of metaprepisternum and outer base of operculum, black; abdomen black with lateral parts of 2nd–4th sterna, 3rd pleuron, lateral parts of ♂ 8th sternum and a large basal spot near ventral margin of ♀ 9th tergum, orange ochreous; ♂ operculum brightly orange; legs dark castaneous, with a central spot on mid and hind coxae, apical part and underside of fore femur, fore tibia, base and apical 1/2 of mid tibia and apex of hind tibia, black.

Wings hyaline with basal cell and basal 1/4 of cell 1A black; hindwing entirely hyaline; veins olivaceous tinged with green, infuscated apically; forewing immaculate, rarely very faintly spotted on 1st and 2nd cross veins.

Head slightly wider than pronotum; frontoclypeus much swollen anteriorly, with 8–10 transverse striations; labium reaching tip of central metaprepisternal process; lateral margin of pronotum somewhat sinuate; mesonotum proper about as long as pronotum;

cruciform edevation strongly depressed; abdomen longer than head and thorax in ♂♂, and as longs as that in ♀♀: ♂ opercula oblong, contiguous to each other at the inner bases, with the outer margins oblique and inner margins slightly sinuate and with the apices rounded, reaching apical margin of 3rd abdominal aternum; ♀ operculum a little hooked laterally, with the apical margin nearly straight (Fig. 196); ♂ 7th sternum triangular with the apex rounded and emarginate at the middle; incision of ♀ 7th sternum wide and triangular (Fig. 197); ♀ 9th segment roundly conical, ca 1.14× as long as wide.

Male gentalia (Figs. 198–202). Very similar to those of *limborgi*; pygofer rather rhombate, widened behind middle, ca 1.79× as long as wide in ventral view, with a caudal beak more acute and ventral lobes rather straight and tuberculate apically; uncus lobe wholly roundish, again widened at subapex, with the apical margin bicaudate, and lateral view of the lobe almost the same as in *limborgi*; theca long with no projection at the apex; vesica long and cylindrical with a long straight saccate process at the apex, protruding obliquely backwards.

Body length: ♂ ca 36 mm, ♀ 30–31 mm. ——Total length: 45–51 mm. ——Expanse of forewings: ca 86 mm.

Distribution. N Thailand.

At a glance, this species has a close resemblance with *exalbida* DISTANT in the *exalbida* group. However, the morphological characters of the ♂ genitalia indicate the close alliance of *gracilis* to *limborgi* from Tenasserim in the *recta* group.

According to Mr Y. UÉMURA's observation made during his collecting trip to northern Thailand in 1981, this cicada seems to dwell in open forests around the valley at Mae Sa Water-fall, probably appearing at the midst of the dry season and sitting on rather narrow trunks of deciduous trees (ca 10 m high and less 20 cm dbh) (pers. comm.).

Cryptotympana moultoni M. HAYASHI, sp. nov.
(Figs. 153, 203, 206–209)

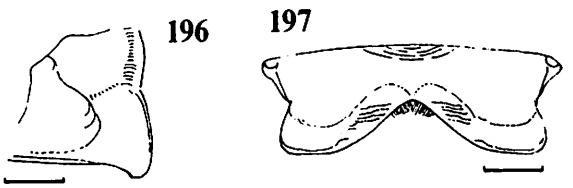
Cryptotympana robinsoni: MOULTON, 1923, *J. fed. Malay Stat. Mus.*, **11**: 136 (*partim*); MOULTON, 1924, ibid., **11**: 351 (*partim*); MOULTON, 1925, *Treubia*, **6**: 436 (*partim*); MOULTON & CHINA, 1926, Suppl. ent., (14): 124.

Holotype: ♂, Medan, Sumatra, MJÖBERG, MOULTON det. (handwriting) "*Cryptotympana robisoni* Moulton" (NRS).

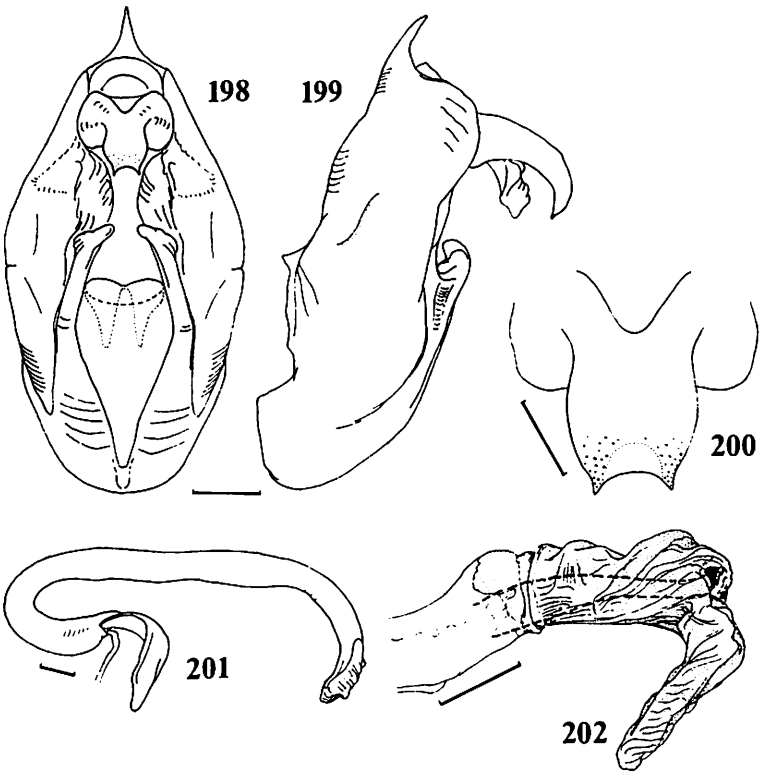
Paratypes: 1 ♂, Padang (Sumatra's Westkust) 2 M, 1926, E. JACOBSON, from alcohol, "W. E. China det., 1926: *Cryptotympana robinsoni* Moult.", for Br. Mus. coll. (BM); 1 ♂, same data (NMNH); 1 ♂, Sumatra's Westkust, 1922–23, H. WITTENROOD (RML); 1 ♂, Fort de Kock (920 m), Sumatra, IV. 1921, E. JACOBSON, "J. C. Moulton det., 19. 8. 24: *Cryptotympana robinsoni* Moulton" (RML).

Type depository: Naturhistoriska Riksmuseet, Stockholm.

Similar in markings and spots of dorsum to *robinsoni*, but differing as follows: an area



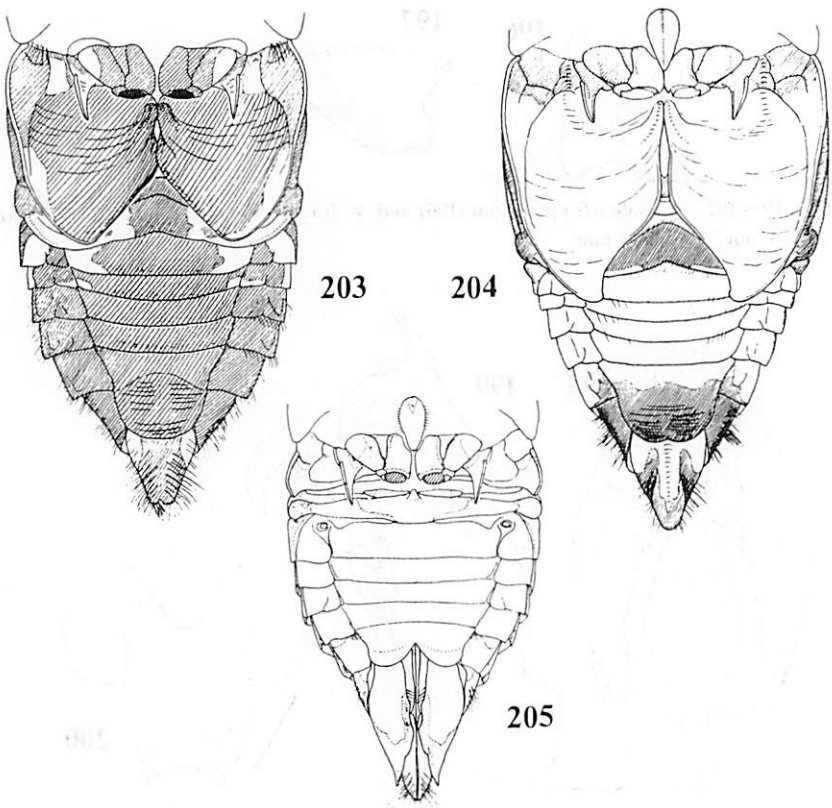
Figs. 196–197. Female left operculum (196) and ♀ 7th abdominal sternum (197) of *gracilis* sp. nov. Scales, 1 mm.



Figs. 198–202. Male genitalia of *C. gracilis* sp. nov. 198, 199: Pygofer in ventral (198) and lateral (199) views. —— 200: Caudal view of uncus lobe. —— 201: Theca. —— 202: Apex of theca with vesica everted in obliquely ventral view. Scales; 1 mm (198–199), 0.5 mm (200–202).

inside inner diagonal groove on pronotum black; a pair of central narrow castaneous fasciae not reaching mesonotal anterior margin; etc.

Venter of body also similar to that of *robinsoni*, furnished with dense gold-grey hairs and with white pollinosity laterally (by individuals); ♂ operculum black with the outer margin dark castaneous; legs black with 2 linear spots on fore femur, basal 2/3 of mid tibia and basal majority of hind tibia ochreous; abdomen black with apical margin of 2nd

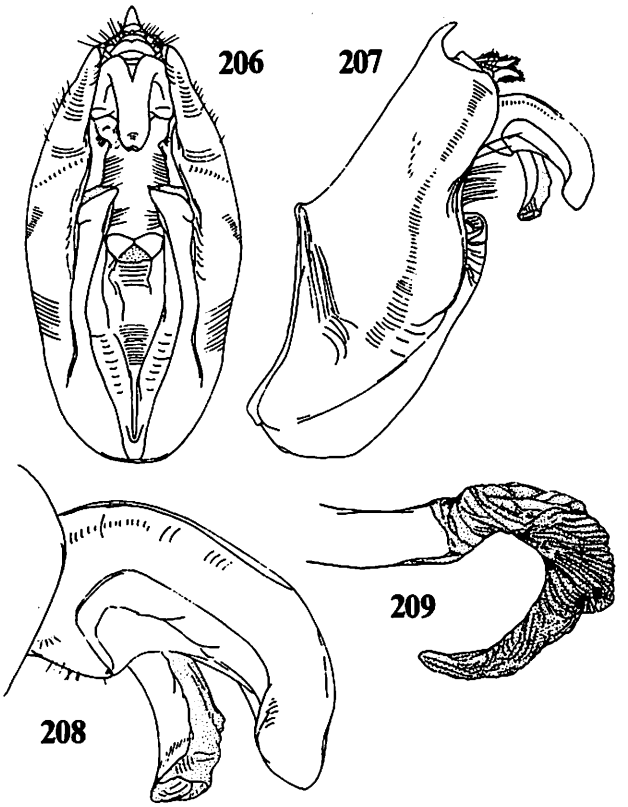


Figs. 203–205. Venter of abdomen; *C. moultoni* sp. nov. (203) and *C. edwardsi* (204–205).

segment laterally, 3rd pleuron, lateral part of 3rd sternum and lateral base of 8th sternum castaneous.

Wings hyaline with basal 1/4 fuscous or black; veins of forewing castaneous basally and fuscous apically with veins C and Sc+R sometimes tinged with green, while those of hindwing fuscous or black with veins CuA and CuP castaneous apically; area along cross veins R_3–R_{4+5} and R_{4+5}–M_1 infuscated, forming a fuscous zigzag marking.

Body similar to but wider than in *robinsoni*; frontoclypeus, 0.96–1.00× as long as wide in frontal view, bearing 7–9 transverse waved striations; labium extending slightly beyond middle of central metaprepisternal process; pronotum wide, acutely expanded at the posterolateral corner and diagonal grooves much more oblique; mesonotum proper shorter than pronotum in median length; parapsidal suture very short, not reaching middle of mesonotum; central part of cruciform elevation narrow and convex dorsally; abdomen obconical, longer than head and thorax in dorsal median length; lateral process of mesepimeron short and triangular in shape; ♂ opercula short and rounded, not beyond 2nd abdominal segment, their inner margins slightly overlapping; caudal margin of 7th



Figs. 206–209. Male genitalia of *C. moultoni* sp. nov. 206, 207: Pygofer in ventral (206) and lateral (207) views. —— 208: Uncus lobe in lateral view. —— 209: Apical part of theca with vesica everted in obliquely ventral view.

sternum widely rounded and somewhat truncate; forewing rather slender with acute apex, with stalk of veins 1M and 2M very short, distinctly shorter than vein 1M before nodal line; vein CuP of forewing well separated from vein 1A in basal 2/3; hindwing short, about 1/2 the length of forewing.

Male genitalia (Figs. 206–209). Pygofer nearly ovate in shape, widened near the middle and narrowed at the apex, ca 1.93× as long as wide; a pair of ventral lobes of pygofer short but distinct, curved inwards to the apices; uncus lobe with a pair of beak-shaped projections at lower base, moderately curved at base, nearly straight at middle and again strongly curved at subapex; theca very thin and narrow in proportion to pygoforal size, without apical projection; vesica short, with a slender falcate saccate process at the apex, distinctly longer than vesica itself.

Body length (♂): 38–42 mm. ——Total length (♂): 57–61 mm. ——Expanse of forewings (♂): ca 121 mm.

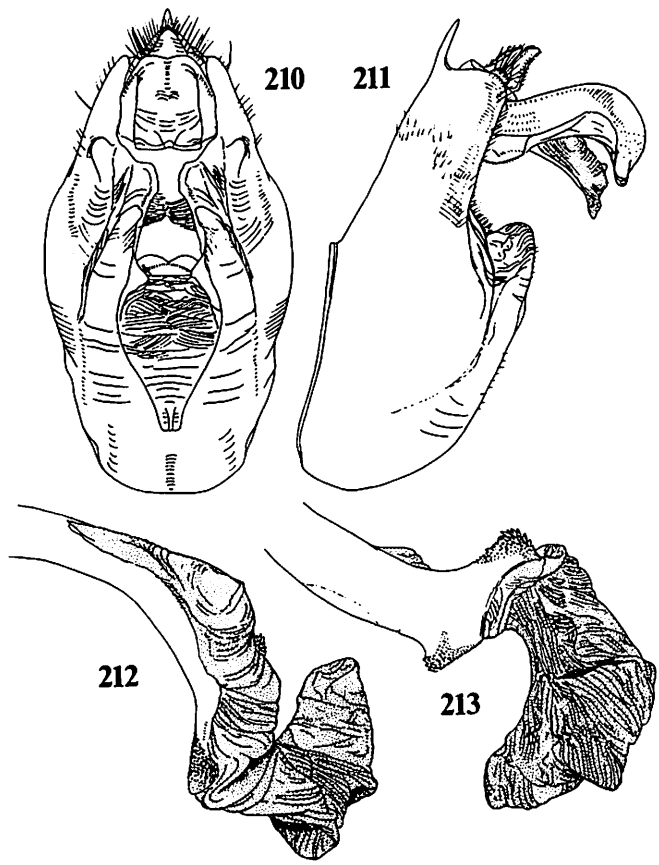
Distribution. Sumatra.

This species, probably endemic to Sumatra, has been confused with *robinsoni* MOULTON, which occurs exclusively in the Malay Peninsula.

Cryptotympana edwardsi KIRKALDY, 1902
(Figs. 155, 204–205, 210–213)

Cryptotympana edwardsi KIRKALDY, 1902, *J. Bombay nat. Hist. Soc.*, **14**: 55.

Specimens examined. 1♀, Karwar, ATKINSON Coll. 92-6 (BM); 1♂ 1♀, same locality, V. 1915, T. R. BELL, B. M. 1934–394 (BM); 1♂ 2♀♀, same locality, 18. IV. 1897, T. R. BELL, B. M. 1934–394 (BM); 3♂♂, Karwar, India, III. 1939 (BM); 1♀, N. Kanara, T. R. BELL, T. R BELL Coll., B. M. 1934–394 (BM); 1♂, Poonmudi Range



Figs. 210–213. Male genitalia of *C. edwardsi*. 210, 211: Pygofer in ventral (210) and lateral (211) views. —— 212, 213: Apical part of theca with vesica everted in lateral (212) and obliquely ventral (213) views.

(3500 ft), Trivandrum Dt., Kerale State, South India, V. 1971, T. R. S. NATHAN, "J. P. Duffels det.: *Cryptotympana exalbida* Dist." (ZMA); 1♂ 2♀♀, without locality, T. R. BELL Coll., B. M. 1934–394 (BM);

Head and thorax black with a lateral spot on anterior margin of vertex, a linear spot on supra-antennal plate, a central spot on anterior tip of frontoclypeus, basal margin of clypeus, a central longitudinal fascia on pronotum, posterior part of pronotal outer area, margined with black and interrupted by black at the middle, a pair of narrow arched spots on mesonotum, extending towards but not to mesonotal anterior margin, lateral surface of mesonotum, continuing to the posterolateral angle, and cruciform elevation except for a black band across the basal arm, dark olivaceous green; abdomen black with outer and lateral parts of timbal covering dark ochreous and with basal margins of 7th and 8th terga clothed with dense grey pilosity.

Venter of body covered with minute golden hairs; thorax black with pronotal paranotum, posterolateral part of mesepimeron and central process of metaprepisternum ochreous; ♂ operculum orange with the extreme base black; fore leg black with a few small spots on coxa, trochanter and femur; mid and hind legs greenish ochreous with coxae (excepting inner part of hind coxa dark brown), trochanters, most part of mid femur, narrow fascia on hind femur, both base and apex of mid tibia, distal end of hind tibia and both basal and apical parts of each tarsus black; abdomen dark ochreous orange with 2nd segment (centrally), apical 3/4 of ♂ 7th sternum, 8th pleuron and lateral and apical parts of 8th sternum, black.

Wings hyaline without tinge; forewing with basal cell opaquely green and with basal 2/5 of cell 1A and area behind vein 2A black; hindwing black at the extreme base; infuscation along 1st and 2nd cross veins of forewing very narrow and faint; veins wholly olivaceous green, and infuscated marginally in hindwing.

Head slightly wider than pronotum; frontoclypeus not so swollen anteriorly, almost as wide as long, with 7 transverse obscure striations; clypeus relatively wide; labium reaching middle of central metaprepisternal process; mesonotum proper about as long as pronotum in median length; cruciform elevation depressed centrally; abdomen obconical, gently narrowed towards apex, longer than head and thorax in ♂♂, shorter than that in ♀♀; basal margin of ♂ 2nd tergum strongly expanded at the middle; lateral dilatation of mesepimeron extending slightly outwards and up-turned; ♂ operculum oblong and triangular at apex, reaching basal margin of 4th (sometimes to 6th) abdominal sternum, with the outer margin more oblique towards apex, and with the inner margin oblique and emarginate; opercula 1/2 the length of abdomen; ♂ 7th sternum wide with caudal margin widely rounded and slightly emarginate at the middle; caudal margin of ♀ 7th sternum sharply incised at the middle; ♀ 9th segment ca 1.29× as long as wide; forewing wide, with apical cells shorter, especially 1st and 2nd apical cells (cells R_2 and 2nd R_3) very short, and with 3rd apical cell (2nd R_5) sinuate apically; vein CuP of forewing separated from vein 1A in basal 1/2.

Male genitalia (Figs. 210–213). Pygofer very large, similar to that of *recta*, widened

near the middle, ca 1.78× as long as wide, with a pair of wide distinct ventral lobes; uncus lobe peculiar in shape and curvature, slightly bent upwards and strongly curved downwards to the subapical part in lateral view, and the apical margin widely truncate; theca flattened dorsoventrally except for its base narrowed at subapex and again widened at apex, bearing a pair of protuberances composed of numerous fine spines on both sides; vesica short, twistedly protruding with a fat saccate process at apex.

Body length: ♂ 37–42 mm, ♀ 34–38 mm. ——Total length: 55–61 mm.—— Expanse of forewings: 102–113 mm.

Distribution. SW India.